2016 2017

COLLEGE CATALOG

HENRY FORD COLLEGE

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Henry Ford College 2016-17 College Catalog Addendum

The following is a summary of the curricular changes that occurred during the 2016-17 academic year. All changes are effective as of the winter 2017 semester. See the following pages for detailed information on the new programs of study and course descriptions.

New Programs:
Applied Plumbing and Pipefitting, CA
CIS – Web Developer, AAS
Cyber Security, CA
Industrial Technology General Studies, AAS
Paralegal Studies, AB

New Courses:
CHD-203: Introduction to Early Childhood Education: Birth – 8
CIS-141: Introduction to Mobile Application Development
CIS-225: Web Frameworks
CIS-241: Advanced Mobile Application Development
CIS-294: Software Engineering
ENGR-240: Circuits
MPS-210: Non-Traditional Machining
TECH-101: Introduction to Industrial Technology
TECH-110: Exploration in Machine Tool Technology
TECH-115: Exploration of CAD/Drafting

Deactivated Programs:
International Business, AB
Industrial Distribution – Business Concentration
Industrial Distribution – Technical Concentration

Deactivated Courses:
BBA-170: Contemporary Selling
BIO-110: Biotechnology and Human Affairs
ENT-252: Green Building Strategies
TAMA-115: Metric Systems and Conversions

Applied Plumbing and Pipefitting Certificate

Year Established
2016

Degree Type
Certificate of Achievement

Office Contact
Industrial Technology Division: 313-845-9656, technology@hfcc.edu, Technology Bldg, Room: E-112

Faculty Contact
Gregory Laskowsky: 313-317-1550, glaskowsky@hfcc.edu, Technology Bldg, Room: E-115D

Description
A fundamental certificate program for plumbing and pipe-fitting. Introduces the basic concepts and principles of plumbing and pipe-fitting theory, design, installation, plumbing codes, blueprint reading and construction project management.

Program Learning Outcomes
1. Identify technical skills required for the trades
2. Safe use of tools and field/shop techniques
3. Read construction blueprints
4. Identify the basics fundamentals of plumbing and pipe-fitting.
5. Design and install drain wastes and vents.*
6. Design and install potable domestic water systems.*
7. Joining various types of plumbing materials.
8. Identify plumbing/pipe-fitting/mechanical codes.
9.

Career Opportunities
- Plumber
- Pipe-fitter
- Trade and Apprentice
- Multi-Skilled Facility Maintenance
- Building Sciences
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Occupational Exposure/Risk
- Hazardous Materials

Required Core Courses

Course name	Credit Hours
ENT-124: Construction Blueprint Reading	2.00
ENT-269: Energy Technology Project Management	2.00

Course name	Credit Hours
MTT-100: Machine Tool Processes I	4.00
PLMB-101: Fundamentals of Plumbing and Pipefitting	3.00
PLMB-110: Drains, Wastes, and Vents	2.00
PLMB-115: Water Supply & Distribution Systems	2.00
PLMB-118: Plumbing, Pipefitting Materials Joining	3.00
PLMB-120: Steam and Hot Water Systems	2.00
PLMB-250: Plumbing Pipefitting Code	2.00
TECH-101: Introduction to Industrial Technology	2.00

Credit Hours: 24
Minimum Total Credit Hours
24.00

Computer Information Systems - Web Development

Year Established
2016

Degree Type
Associate in Applied Science

Office Contact
Business and Computer Technology Division: 313-845-9645, business@hfcc.edu, Technology Bldg, Room: E-211

Faculty Contact
David Maier: 313-845-9890, djmaier@hfcc.edu, Technology Bldg, Room: E-162H

Description
Prepares graduates for an entry-level position as a Full Stack Web Developer, Web Administrator, Web Programmer or Multimedia Developer. The Web Development Associate Degree distinguishes itself with extensive hands-on laboratory experience using the latest technology and software. Industry-experienced, full-time faculty provide the highest quality instruction on the latest web development environments and frameworks, graphics and design techniques, client and server-side coding and scripting, back-end technologies, database, multimedia tools, and project management principles.

Program Learning Outcomes
- Explain the client – server model of web development and develop client and server – side web pages.
- Implement HTML, CSS, and JavaScript to provide dynamic, client – side services.
- Develop and publish a web site utilizing web authoring and content management software.
- Use a client-side web framework to create web pages.
- Use a server-side web framework (web application framework) to create web pages.
- Interface with the Unix/Linux operating system, including the vi editor, file management, and shell scripting.
- Design and create a database-backed website in PHP and MySQL.
- Configure a web server with dynamic content and database connectivity.
- Analyze, design, and implement an information system.
- Create and deliver a professional team presentation.

Career Opportunities
Prepare graduates for an entry-level position as a Full Stack Web Developer, Web Administrator, or Web Programmer.

General Education
Category 7
Complete any additional General Education course.
Credit Hours
3.00
Required Core Courses

Course name	Credit Hours
ART-107: Photoshop	3.00
CIS-100: Introduction to Information Technology	3.00
CIS-111: SQL for Database Development	3.00
CIS-122: Web Internet Technologies	3.00
CIS-125: Principles of Programming Logic	4.00
CIS-126: HTML/CSS Web Programming	4.00
CIS-129: Introduction to UNIX with Shell Scripting	4.00
CIS-130: C# Programming	3.00
CIS-172: JavaScript	3.00
CIS-211: Web Server Administration	2.00
CIS-222: Web Database Development with PHP	4.00
CIS-225: Web Frameworks	3.00
CIS-227: Web Site Management	4.00
CIS-294: Software Engineering	3.00

Credit Hours: 46

Required Support Courses

Course name	Credit Hours
ENG-131: Introduction to College Writing	3.00
Web Development Support: Complete 3 credits • ART-245: Interactive Design • CIS-171: Java Programming • CIS-190: Co-op in Computer Information Systems • CIS-232: Advanced C# Database Programming • CIS-290: Co-op in Computer Information Systems • CIS-297: Special Topics in Computer Information Systems • CIS-298: Special Topics in Computer Information Systems • CIS-299: Special Topics in Computer Information Systems	3.00

Course name	Credit Hours
Mathematics: Complete one: • BMA-110: Business Math • MATH-115: College Algebra • MATH-131: Mathematics for the Modern World • MATH-141: Introduction to Statistics • MATH-150: Finite Mathematics • MATH-153: Calculus for Business, Life Science, and Social Sciences • MATH-175: Precalculus • MATH-180: Calculus I • MATH-183: Calculus II • MATH-275: Discrete Mathematics • MATH-280: Calculus III • MATH-283: Linear Algebra • MATH-289: Differential Equations	3.00

Credit Hours: 9

ELECT Note
Complete additional 100-level, or higher, courses to complete the requirements for this degree.

Elective Hours
2.00

Minimum Total Credit Hours
60.00

Cybersecurity Certificate

Year Established
2016

Degree Type
Certificate of Achievement

Office Contact
Business and Computer Technology Division: 313-845-9645, business@hfcc.edu, Technology Bldg, Room: E-211

Faculty Contact
Marrci Conner: 313-845-4021, mrconner2@hfcc.edu, Technology Bldg, Room: E-162J

Description
Provides a mid-level understanding of the technological needs, threats, and vulnerabilities of hardware, software, operating systems, networks and the Internet. Students will examine operating systems, networks, tools and protocols needed to navigate, use, and manage security technologies as well as gain insight into the legal, social, and political dynamics of the cyber universe. Designed for students interested in cyber defense or IT professionals seeking a fundamental understanding of cybersecurity.

Program Learning Outcomes
- Write UNIX shell scripts and manipulate the UNIX operating system and services.
- Recognize networks, operating systems and hardware.
- Identify and explain the ten domains of cybersecurity.
- Analyze and establish security requirements for systems/networks.
- Defend systems against unauthorized access, modification and/or destruction.
- Use cybersecurity tools (KALI, NMAP, Wireshark, SNORT, etc.)
- Define access privileges, control structures, and resources.
-

Career Opportunities
Information security professionals plan and carry out security measures to protect an organization's computer networks and systems. Their responsibilities are continually expanding as the number of cyber attacks increases. There are many different careers paths to explore in Cybersecurity:
- Computer and Information Technology Occupations
- Cybersecurity Jobs, Burning Glass Technologies Research
- Entry Level IT Jobs
- Network and Computer Systems Administrators, Salary Approximately $77,810
- Information Security Analysts, Salary Approximately $90,120
- Information Assurance Analyst, Salary Approximately $96,400
- Penetration Testers (Ethical Hackers), Salary Approximately $77,774
- Chief Information Security Officer, Salary Approximately $145,319

Additional Information:

- [Detroit Free Press: The 10 hottest jobs in Michigan in 2015](#)
- [The Huffington Post: Research Supports Work of Community Colleges](#)
- [mLive: Detroit among 'fastest-growing cities for tech jobs,' CNN Money says](#)
- [Community college graduates in fields like IT can out-earn bachelor's degree holders](#)

Required Core Courses

Course name	Credit Hours
[CIS-125: Principles of Programming Logic](#)	4.00
[CIS-129: Introduction to UNIX with Shell Scripting](#)	4.00
[CNT-260: Network Security](#)	4.00
[CIS-280: Information Assurance and Security](#)	4.00
Complete one: • [CIS-112: Introduction to Networking](#) • [CNT-110: CCNA: Networking I](#)	3.00

Credit Hours: 19

Minimum Total Credit Hours
19.00

Industrial Technology General Studies

Year Established
2016

Degree Type
Associate in Applied Science

Office Contact
Industrial Technology Division: 313-845-9656, technology@hfcc.edu, Technology Bldg, Room: E-112

Faculty Contact
Guy Pizzino: 313-845-6331, gpizzino@hfcc.edu, Technology Bldg, Room: E-115

Description
Explores a wide range of skill development, helps to improve knowledge of technology, and helps enhance employment opportunities in areas such as Energy Technology, Automotive, Manufacturing, Architecture/Construction, HVAC, Renewable Energy, Power Engineering, Welding, Drafting, Machining and CNC, and Electrical Technology. A flexible Industrial Technology degree where students can obtain experience in multiple technologies and develop applied skills that are demonstrated through learning outcomes validated by industry. This degree can be combined with certificate programs and degrees in other areas and is also intended for Apprentices for the purpose of degree completion.

Program Learning Outcomes
- Develop safe working habits with advanced technology tools & equipment.
- Apply digital skills in the application of different advanced technologies.
- Apply quantitative skills in the application of different advanced technologies.
- Demonstrate technological literacy of different advanced technologies through vocabulary, terminology and applications.
- Develop appropriate communications tools and strategies for different advanced technological applications.

Occupational Exposure/Risk
Health and safety hazards for working in the advanced technological workplace typically fall into one of six general categories as listed below:
1. Biological: This depends on the workplace itself, and can be related to the specific manufactured goods being produced that one may encounter biological hazards.
2. Chemical: This depends upon the workplace itself where fumes can be present as a result of manufacturing processes and procedures. Where Welding occurs fumes normally contain oxides of the materials being welded and of the electrodes being used. Care should be taken when working near these fumes as health effects can be both immediate, or occur at a later time. Welders also often work with and around:
   - Flammable and combustible liquids
   - Compressed gases
   - Asbestos

3. Ergonomic: Many injuries to industrial workers are the result of strains, sprains and work-related musculoskeletal disorders (WMSDs). Industrial and technological service workers often have to:
    - Lift or move heavy objects.
    - Work in awkward positions for long periods of time.
    - Perform repetitive motions.
    - See OSHA answers document on welding - ergonomics for more information.
4. Physical: Industrial workers can be exposed to:
    - Excessive noise levels.
    - Excessive heat or cold.
    - Electromagnetic fields.
    - Laser light.
    - Radiation.
    - Welding arcs and flames can emit intense visible (VIS), ultraviolet (UV) and infrared (IR) radiation. Gamma- or x-rays can be emitted by inspection equipment or welding machines. Skin and eye damage such as welder's eye or cataracts can result to certain types of radiation.
5. Safety: Industrial workers including Welders often have to work:
    - At heights.
    - In confined spaces.
    - Could experience electrical shock or electrocution.
    - Other safety hazards include:
        o Flying particles which can enter the eye or skin.
        o Cuts and stabs from sharp metal edges.
        o Injury from other equipment (e.g., using power tools such as grinders, chippers, drills, etc.).
        o Slips, trips or falls due to location or environment near the job.
        o Burns from hot surfaces, flames, sparks, etc.
        o Fires from sparks, flames or hot metals (a special situation includes when the surrounding atmosphere becomes oxygen enriched and thus easier to ignite.) Fires may also result from flashbacks or equipment failure. Please note that clothes soiled with oils or grease can burn more easily. In addition, sleeves or cuffs that are folded or rolled up can catch sparks and increase the risk of fire.
6. Psychological: Work demands and deadlines may contribute to stress felt on the job. In addition, some industrial workers may be required to work shifts or extended work days which can have health effects.

General Education Requirements
Complete 3 hours from any course from the Computer Technology list.
Category 2: English Composition or Communications
Complete any one.
Category 3: Mathematics
Complete any one.
Category 4: Social Sciences
Complete any one.
Credit Hours
12.00
Required Core Courses

Course name	Credit Hours
Industrial Technology: Complete 33 credits from ACT, AUTO, CIMEL, CIMHP, CIMMT, CIMPR, CIMTA, CIMWD, ELEC, ENGT, ENT, DRAF, MFMT, MTT, PEFT, PLMB, REEN, TADV, TAEL, TAFD, TAFP, TAGD, TAIM, TAMA, TAMJ, TAMT, TAPI, TAPP, TAPT, TASM	33.00

Credit Hours: 33

Required Support Courses

Course name	Credit Hours
ENG-131: Introduction to College Writing	3.00

Credit Hours: 3

ELECT Note
Complete additional 100-level, or higher, credits to complete this degree.

Elective Hours
12.00

Minimum Total Credit Hours
60.00

Paralegal Studies

Year Established
2016

Degree Type
Certificate of Achievement

Office Contact
Business and Computer Technology Division: 313-845-9645, business@hfcc.edu, Technology Bldg, Room: E-211

Faculty Contact
Rachelle Loomus: 313-317-4158, rsloomus@hfcc.edu, Liberal Arts Building, Room: K-331

Description
Provides students who have earned an Associate's or Bachelor's degree with a solid foundation of core legal knowledge and essential skills necessary for a career in the legal profession. A paralegal is employed by a law office, business, or government agency and performs specifically delegated substantive legal work for which a lawyer is responsible. Paralegals are not lawyers and are not permitted to provide legal services directly to the public except as permitted by law. Paralegals must work under the supervision of an attorney.

Program Learning Outcomes
- Prepare legal documents using proper legal reasoning and analysis of issues, facts, and law.
- Use critical thinking skills and legal research skills to solve legal problems and make well-reasoned legal and ethical decisions.
- Articulate the structure of the legal system and the paralegal's duties and responsibilities for the delivery of legal services within that system.
- Critically analyze and resolve legal problems; and communicate these results in a clear and effective manner, both orally and in writing.
- Demonstrate the computer, time-management, organizational, and communication skills necessary to work professionally and efficiently in a legal environment.

Career Opportunities
Employment in a law office, in government, or in the private sector.

Admission Requirements and Eligibility
Students must have already successfully completed an A.A., A.B., A.S., or Bachelor's degree, from a regionally accredited institution. A four-year degree is highly recommended. Students following this curriculum must have proof of their A.A., A.B., A.S., or Bachelor's degree on file and entered on their official Henry Ford College transcript before beginning this curriculum.

Required Core Courses

Course name	Credit Hours
PLGL-100: Essential Paralegal Skills	2.00
PLGL-110: Legal Ethics	2.00
PLGL-115: Property Law	3.00
PLGL-126: Legal Research	4.00
PLGL-200: Civil Litigation	4.00
PLGL-226: Legal Writing	4.00
PLGL-235: Commercial Transactions	3.00

Credit Hours: 22

Required Support Courses

Course name	Credit Hours
Complete three credits: • PLGL-190: Co-op in Paralegal Studies • PLGL-220: Personal Injury Litigation • PLGL-228: Technology in the Law • PLGL-240: Family Law • PLGL-245: Estate Planning and Probate • PLGL-248: Immigration Law • PLGL-250: Business Organizations • PLGL-290: Co-op in Paralegal Studies • PLGL-295: Paralegal Internship • PLGL-299: Special Topics in Law	3.00

Credit Hours: 3

Minimum Total Credit Hours
25.00

CHD-203: Introduction to Early Childhood Education: Birth – 8

Credit Hours
3.00
Contact Hours
3.00
Course Description
An introduction course to the field of early childhood education, focusing on the history and development of educational programs for young children birth to age eight. Students will develop a better understanding of the role of adults, basic child development theory, domains of development, play relationships, developing positive relationships with diverse families, observation in early childhood programs, curriculum development, and child guidance. This course is a pre-requisite for the rest of the required CORE courses in the Children and Families Program.

The Following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:
- 1a: Knowing and understanding young children's characteristics and needs.
- 1b: Knowing and understanding the multiple influences on early development and learning.
- 1c: Using developmental knowledge to create healthy, respectful, supportive, and challenging learning environments for young children.

2. Building Family and Community Relationships:
- 2a: Knowing about and understanding diverse families and communities.
- 2b: Supporting and engaging families and communities through respectful, reciprocal relationships.

3. Observing, Documenting, and Assessing to Support Young Children and Families:
- 3a: Understanding the goals, benefits, and uses of assessment.
- 3d. Knowing about assessment partnerships with families and other professionals.

4. Using Effective Approaches to Connect with Children and Families:
- 4a: Knowing, understanding, and using positive relationships.
- 4b: Knowing, understanding, and using effective approaches, strategies, and tools for early education.

5. Using Content Knowledge to Build Meaningful Curriculum:
- 5a: Understanding content knowledge and resources in academic disciplines.

Co-requisites
CHD-211

CIS-141: Introduction to Mobile Application Development

Credit Hours
2.00
Contact Hours
2.00
Course Description
An introductory-level course covering application development for mobile and handheld devices. Emphasizes application programming principles, user experience and functionality considerations, and software architecture. Students will build and deploy basic mobile apps for several of the most popular mobile platforms.
Pre-requisites
CIS-100

CIS-225: Web Frameworks

Credit Hours
3.00
Contact Hours
4.00
Course Description
An advanced-level course covering client- and server-side web development frameworks. Web frameworks will be used to create both dynamic front-end user-interfaces and web applications. Popular web frameworks will be used, e.g. Bootstrap, AngularJS, Ember, Django.
Pre-requisites
CIS-111 and CIS-122 and CIS-172

CIS-241: Advanced Mobile Application Development

Credit Hours
3.00
Contact Hours
3.00
Course Description
An advanced-level course expanding on mobile application development across implementation platforms. Covers data handling and connectivity to back-end services including those hosted in a cloud environment. Design approaches to efficiently reach a large segment in the mobile market will be covered.
Pre-requisites
CIS-141 with either CIS-130 or CIS-170, or just CIS-171 or CIS-230

CIS-294: Software Engineering

Credit Hours
3.00
Contact Hours
3.00
Course Description
A capstone course involving the study of techniques used by the systems analyst to design and implement computerized business information systems. Emphasizes written and oral communication skills necessary for the information technology professional through participation in a systems project designed to reinforce course material.
Pre-requisites
CIS-111, CIS-125 and one of the following: CIS-122, CIS-130, or CIS-170

ENGR-240: Circuits

Credit Hours
5.00
Contact Hours
6.00
Course Description
Intended for students planning to pursue an electrical engineering or biomedical engineering concentration. Topics covered include: Voltage, Current, Power, Resistance, Ohm's law, Kirchhoff's laws, Independent and Dependent Sources, Voltage Divider, Current Divider, Delta-Wye and Wye-Delta Transformations, Nodal and Mesh Analysis, Source Transformation, Thevenin and Norton Theorems, Maximum Power Transfer, Operational Amplifier Analysis, Inductance and Capacitance, Natural Response and Step Response of 1st and 2nd Order Systems, Sinusoidal Steady-State Analysis, Phasors, Bode Plots, Circuit analysis in the S-Domain utilizing Laplace Transforms. This course will incorporate a lab utilizing circuit components, breadboard, multimeter, oscilloscope, and function generator. Labs will also incorporate the use of an industry standard circuit simulation software package.
Pre-requisites
PHYS-232 and MATH-289

MPS-210: Non-Traditional Machining

Credit Hours
4.00
Contact Hours
4.00
Course Description
An advanced course in Non-Traditional material removal techniques applying mechanical, electrical, and thermal energies. Practical experience is gained through electrode development and operating the EDM machine.
Pre-requisites
MPS-110

TECH-101: Introduction to Industrial Technology
Credit Hours
2.00
Contact Hours
3.00
Course Description
Introduces students to the fundamentals of being a successful college student on the path to a profession in industrial technology. Subjects are divided into three categories: Student Self Awareness, Manufacturing Work and Culture, and Test Taking (technical), and include topics such as self-directed learning, critical thinking and problem solving, industrial safety policies and procedures, job outlook, and elements of standardized testing including graphic arithmetic, assemblies, mechanical comprehension, and troubleshooting. The class includes guest speakers from manufacturing and the service industry. The course utilizes digital learning materials, hands-on labs, and a student self assessment of their learning and study skills.

TECH-110: Exploration In Machine Tool Technology
Credit Hours
1.00
Contact Hours
0.93
Course Description
Introduces safe operation of basic machine tools, specifically the horizontal band saw and engine lathe. Precision measurement and lay out techniques are also covered giving students an exploratory experience in early stage manufacturing processes.

TECH-115: Exploration of CAD/Drafting
Credit Hours
1.00
Contact Hours
0.93
Course Description
Introduces the basic CAD/Drafting principles, skills, and terminology. Uses hands-on methods through a project-based approach. The purpose of this course is to explore solid modeling techniques that are similar to industry method of operations.

Accounting

Associate in Business
Program Code: ACCTG.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Patricia Little • (313) 317-1723 • plittle@hfcc.edu • Technology Bldg • Room: E-211H

Program Information

Description

Explores accounting theory and practice, and how accounting interrelates with other important business operations such as payroll, budget, and finance.

Learning Outcomes

- Prepare financial statements according to Generally Accepted Accounting Principles (GAAP).

- Evaluate business decisions given the legal and economic framework in which business functions.

- Analyze financial statements.

- Prepare final reports summarizing planning and control activities.

- Demonstrate effective written, verbal, and nonverbal communication in the business environment.

- Demonstrate industry-standard computer skills.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete both of the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 18

Accounting

ASSOCIATE IN BUSINESS

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

BAC-131: Introduction to Financial Accounting
BAC-132: Introduction to Managerial Accounting
BAC-231: Asset Accounting

Complete one of the following:
BAC-141: Computerized Accounting - QuickBooks
BAC-146: Computerized Accounting—Peachtree

Complete one of the following:
BAC-234: Equity Accounting
BAC-235: Tax Accounting
BAC-262: Cost Accounting

Minimum Credit Hours: 17.0

REQUIRED SUPPORT COURSES

BBA-131: Introduction to Business
BEC-151: Principles of Macroeconomics
BEC-152: Principles of Microeconomics
BLW-253: Business Law and the Legal Environment

Minimum Credit Hours: 14.0

ELECTIVE COURSES

Minimum Credit Hours: 7.0

Complete elective credits to meet the minimum number of credits required for the Associate's degree.

Students will need 7 - 11 credits of electives depending on General Education and Required Core course selections.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Eastern Michigan University
Lawrence Technological University
Siena Heights University
University of Detroit Mercy
University of Michigan - Dearborn
Walsh College
Wayne State University

Accounting Technician

CERTIFICATE OF ACHIEVEMENT

HENRY
FORD
COLLEGE

FUTUREDRIVEN

Accounting Technician Certificate

Certificate of Achievement
Program Code: ACCTTECH.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Patricia Little • (313) 317-1723 • plittle@hfcc.edu • Technology Bldg • Room: E-211H

Program Information

Description

Offers preparation for those interested in working as an accounting technician in a small- to medium-sized business. Students are trained to use a double-entry accounting system to perform basic accounting functions such as journalizing and posting business transactions; preparing adjusting entries, and basic financial statements. Students are trained in computerized accounting software (QuickBooks) and in the Microsoft Office Suite. Courses in business math applications, written business communication, and business office protocol are also part of the program.

Learning Outcomes

• Prepare financial statements according to Generally Accepted Accounting Principles (GAAP).

• Demonstrate industry standard computer skills.

• Prepare both wage and salary payroll including summary reports and journal entries.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete one of the following: no required courses

2. **Communication:**
   Complete:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   no required courses

5. **Quantitative Literacy:**
   BMA-110: Business Math OR MATH-110 or HIGHER*

NOTE:
For this program, General Education minimum credits: 9

REQUIRED CORE COURSES

BAC-110: Practical Accounting
BAC-120: Introduction to Payroll Accounting
BAC-131: Introduction to Financial Accounting
BAC-141: Computerized Accounting - QuickBooks

Minimum Credit Hours: 12.0

REQUIRED SUPPORT COURSES

BBA-133: Business Behavior and Communication
BCO-190: Co-op in Business

Minimum Credit Hours: 4.0

*Students interested in pursuing the associate's degree in Accounting should consider taking MATH 115 or higher as required in that degree program.

ELECTIVE COURSES

Minimum Number Of Credits To Graduate

25.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Accounting Technician
Payroll Clerk

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

BUSINESS AND COMPUTER TECHNOLOGY

Administrative and Information Management

Associate in Business
Program Code: ADMIS.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Diana Baran • (313) 317-1583 • dbaran@hfcc.edu • Liberal Arts Bldg • Room: K-303

Program Information

Description

Provides highly sought after credentials needed by administrative professionals in today's competitive work environment. The mastery of information management, the advancements in computer technology, and the need for support of all business units within an organization have transformed the office setting. The Administrative and Information Management (AIM) program opens a career path for students interested in the administrative/management-support field and provides individuals already in the profession with the opportunity to upgrade their skills.

While working toward the AIM degree, students may also choose to earn certificates in Computer Software Applications, Office Administration or Office Skills Fundamentals.

NOTE:
 After earning 12 credits, students whose declared major is AIM are eligible to apply for the Frederick P. and Violet Sharpe Scholarship.

Learning Outcomes

* Compose effective written communication for a business environment.
* Demonstrate effective non-verbal and verbal communication skills for a business environment.
* Employ effective organizational skills in a business environment.
* Practice proper business etiquette and business protocol.
* Employ effective problem-solving skills.
* Employ effective supervisory skills.
* Work effectively in teams with diverse populations.
* Use word-processing software at an advanced level for Microsoft Office.
* Use spreadsheet software at an advanced level for Microsoft Office.
* Use database software at an advanced level for Microsoft Office.
* Use presentation software at an advanced level for Microsoft Office.
* Perform financial record keeping.
* Identify, locate, evaluate, and effectively use information to solve problems.

ADMISSION REQUIREMENTS / ELIGIBILITY

For information regarding the Frederick P. and Violet Sharpe Scholarship, please visit the College's Foundation Office located on the fourth floor of the Andrew A. Mazzara Administrative Services and Conference Center (Building L).

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete both of the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. Quantitative Literacy:

Complete one of the following:
BMA-110: Business Math
MATH-115: College Algebra
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 18

Degree-Specific Requirements

Fulfill the Required Core Courses for this program.

REQUIRED CORE COURSES

BAC-110: Practical Accounting
BBA-110: Business Language Skills
BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
BBA-231: Business Office Communications
BBA-235: Office Administration Practicum
BCA-125: Introduction to the Internet and Web Pages
BCA-143: Word Processing
BCA-145: Spreadsheets
BCA-147: Database Applications
BCA-152: Presentation Software
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding
Complete one of the following:
BCO-190: Co-op in Business
BCO-290: Co-op in Business

Minimum Credit Hours: 42.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Executive assistant
Administrative assistant
Office manager
Office supervisor
Administrative professional

Automotive Service Management – Business Concentration

ASSOCIATE IN BUSINESS

Automotive Service Management — Business Concentration

Associate in Business
Program Code: AUTOSERVMGMT.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Corinne Asher • (313) 845-9867 • casher@hfcc.edu • Liberal Arts Bldg • Room: K-325

Program Information

Description

Provides students with a solid background for a career in the automotive service field. Covers both management skills and automotive service knowledge including effective communication with customers, co-workers, and service technicians; and technologies used in modern automobiles. Students may elect, by the selection of specific courses, to pursue either the Associate in Business degree, with required core courses in business, or the Associate in Applied Science degree, with required core courses in automotive.

Learning Outcomes

- Interpret basic financial statements.
- Apply management theory to effectively supervise the human resources of an organization.
- Evaluate management decisions given an organization's relationship to the external business environment.
- Creatively solve common problems in managing an organization.
- Demonstrate effective non-verbal and verbal communication skills for a business environment.
- Demonstrate effective written communication skills for a business environment.
- Employ computer applications to perform business activities.
- Develop the requisite entry-level skills and knowledge for employment in the automotive service industry.
- Demonstrate the utilization of safety hazards standards/precautions as associated with the automotive service industry.
- Demonstrate the necessary skills to work safely in auto labs and service shop environments.
- Demonstrate the characteristics and standards of professionalism that contribute to an effective job performance in a manner that include behavior, appearance, and punctuality.
- Demonstrate effective communication skills both in the written and verbal forms to communicate difficult and technical information to others, including fellow students, instructors and/or customers.

ACCREDITATION

The Automotive Technology program is certified by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF) Board.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

    Complete one of the following:
    ASL-130: Deaf Culture and the Deaf Community
    EDU-260: History and Civics in Elementary Schools
    GEOG-132: World Regional Geography
    HIST-151: American History I
    HIST-152: American History II
    POLS-101: American Government: Democratic Participation and Civic Engagement
    POLS-131: Introduction to American Government and Political Science
    POLS-152: International Relations
    POLS-200: Introduction to Peace and Conflict Studies
    SOC-131: Introduction to Sociology
    SOC-152: Women, Men, and Society
    SOC-251: Ethnic and Racial Diversity in Society
    WR-131: Religious Traditions in the World

2. **Communication:**

    Complete the following:
    ENG-131: Introduction to College Writing

3. **Computer Technology:**

    Complete the following:
    CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

    Complete one of the following:
    ENG-132: College Writing and Research
    ENG-135: Business and Technical Writing and Research

5. Quantitative Literacy:

Complete the following:
BMA-110: Business Math

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
BBA-153: Customer Service
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding
BCO-190: Co-op in Business
Complete one of the following:
BAC-110: Practical Accounting
BAC-131: Introduction to Financial Accounting

Minimum Credit Hours: 21.0

REQUIRED SUPPORT COURSES

AUTO-101: Automotive Fundamentals
AUTO-105: Internal Combustion Engines
AUTO-110: Automotive Electrical Systems
AUTO-120: Automotive Fuel Management Systems
AUTO-131: Automotive Ignition Systems
AUTO-140: Automotive Transmissions Systems
AUTO-150: Automotive Diagnosis and Engine Evaluation
AUTO-160: Automotive Chassis Units
AUTO-225: Automotive Air Conditioning
AUTO-230: Automotive Diesel Principles
AUTO-190: Co-op in Automotive Technology

Minimum Credit Hours: 26.0

Minimum Number Of Credits To Graduate

62.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Graduates may find employment as service managers of automotive dealerships, managers of aftermarket automotive repair and parts chain stores, assistant service managers, service advisors, service writers, or service consultants.

Baking and Pastry

CERTIFICATE OF ACHIEVEMENT

Baking and Pastry

Certificate of Achievement
Program Code: BAKING.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Eric Gackenbach • (313) 317-1572 • epgackenbach@hfcc.edu • Student Center • Room: M-163C

Program Information

Description

Let your creativity shine while learning the various facets of the baking and pastry fields. Courses in this certificate program may be applied toward an Associate in Applied Science Degree in Culinary Arts and/or an Associate in Applied Science Degree in Hotel/Restaurant Management.

Learning Outcomes

- Execute a menu from start to finish in compliance with ACF category F and G standards for edible hot and cold food.

- Based on NRA standards, decide how to handle various types of food in order to prevent food borne illness.

ACCREDITATION

The Associate in Applied Science in Culinary Arts at HFC is fully accredited by the Accrediting Commission of the American Culinary Federation Educational Foundation.

Degree Specific Requirements

REQUIRED CORE COURSES

HOSP-105: Applied Food Service Sanitation
HOSP-220: Introduction to Baking and Cooking
HOSP-224: Culinary Skills and Nutritional Cooking
HOSP-226: Fundamentals of Baking
HOSP-245: Hotel and Restaurant Desserts
HOSP-255: Professional Cake Decorating
HOSP-331: Modern and European Pastry
HOSP-340: A'la Carte and Buffet Cookery

Minimum Credit Hours: 30.0

> **NOTE:**
> HOSP-220 (2 credit hours), HOSP-224 (3 credit hours), and HOSP-226 (3 credit hours) must be taken concurrently.

Minimum Number Of Credits To Graduate

30.0 (Including Options/Electives)

Additional Program Requirements

Official HFC chef's uniform required to be purchased prior to beginning classes for culinary lab courses - contact department on process to order uniforms. Visit the Hospitality Department in M-163 in the Culinary Arts & Student Center building, or online at **https://culinary.hfcc.edu**/ for uniform ordering information.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Business Administration

ASSOCIATE IN BUSINESS

Business Administration

Associate in Business
Program Code: BUSAD.AB

Contact

Business and Computer Technology Division • (313) 845-9804 •
business@hfcc.edu • Technology Bldg • Room: E-211

Jared Boyd • (313) 845-9697 • jpboyd@hfcc.edu •
Liberal Arts Bldg • Room: K-329

Program Information

Description

Provides students with fundamental knowledge in business studies.
Designed to afford students with the ability to transfer to specific four-
year bachelor degree programs with the maximum number of credits
possible. The core courses in the Business Administration program
consist of courses that are often required by four-year institutions to
enter their business programs.

Learning Outcomes

- Explain how activities involved in operating a business connect
  with one another.

- Analyze financial conditions utilizing principles of accounting.

- Develop business strategies.

- Analyze how economic forces and government policies affect
  business alternatives as well as social outcomes.

- Evaluate business decisions based on their legal consequences.

- Evaluate the opportunities and threats resulting from current
  business trends.

- Model appropriate and effective verbal and nonverbal
  communication with employers, employees, team members,
  business partners, and customers.

- Apply algebraic concepts to solve business related problems and
  conduct business research.

- Employ computer software application programs such as word
  processing, spreadsheets, and database to perform ordinary
  business activities.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet
Degree-Specific Requirements AND General Education Requirements.
Courses listed in the Required Core and/or Required Support Courses
may also be used to fulfill Degree-Specific and General Education
Requirements. Developmental courses (those numbered below 100)
cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire
program form before making course selections for registration pur-
poses. The College recommends that students meet with an advisor or
counselor well in advance of registration deadlines and before making
course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's
General Education Outcomes for this program. Students who change
their program will need to confirm in advance that they are complet-
ing all required courses for their specific program of study, including
additional General Education courses. All Associate in Business
degrees require at least 15 credits total including at least three credits
from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and
   Civic Engagement
   POLS-131: Introduction to American Government and Political
   Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete both of the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics

MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 1..........................8

Degree-Specific Requirements

Fulfill the Required Core and/or Elective Courses for this program.

REQUIRED CORE COURSES

BBA-131: Introduction to Business
BAC-131: Introduction to Financial Accounting
BAC-132: Introduction to Managerial Accounting
BEC-151: Principles of Macroeconomics
BEC-152: Principles of Microeconomics
BLW-253: Business Law and the Legal Environment

Minimum Credit Hours: 22.0

ELECTIVE COURSES

Minimum Credit Hours: 18.0

Complete elective credits to meet the minimum number of credits required for the Associate's degree.

Students will need 18 - 20 credits of electives depending on General Education selections.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Eastern Michigan University
Northwood University
University of Detroit Mercy
University of Michigan - Dearborn
Walsh College
Wayne State University

Computer Information Systems

Associate in Applied Science
Program Code: CISYS.AAS

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Kimberly Moscardelli • (313) 845-1549 • kimm@hfcc.edu • Technology Bldg • Room: E162-G

Program Information

Description

Provides students with in-depth skills and knowledge in a broad range of IT disciplines including programming, database development, PC repair, networking, operating systems, security, web development, and system analysis and design. Courses in the CIS program include extensive hands-on laboratory work in current industry technology and software, such as PHP, MySQL, Oracle, .NET, Java and Mobile Application Development. HFC is also a member of Microsoft's MSDN Academic Alliance Program which allows the College to provide students with many of their development tools at an affordable cost.

Learning Outcomes

- Operate a personal computer and productivity software installed on it, including Microsoft Office, file management, the Internet/Web, e-mail, and input/output/storage devices.

- Explain the importance of personal responsibility and security in a technological world, including copyright laws, netiquette, ethics, privacy issues, and security threats.

- Design, create and manipulate with an enterprise database.

- Explain networking standards, protocols, transmission media, and hardware.

- Write computer programs using several programming languages, both procedural and object-oriented.

- Explain the client-server model of web development and develop client and server-side web pages.

- Interface with the Unix/Linux operating system, including the vi editor, file management, and shell scripting.

- Analyze, design, and implement an information system.

- Create and deliver a professional team presentation.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geograph]
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

Computer Information Systems

ASSOCIATE IN APPLIED SCIENCE

5. Quantitative Literacy:

Complete at least three hours from the following:
BMA-110: Business Math
MATH-115: College Algebra
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

CIS-111: SQL for Database Development
CIS-112: Introduction to Networking
CIS-122: Web Internet Technologies
CIS-125: Principles of Programming Logic
CIS-129: Introduction to UNIX with Shell Scripting
CIS-130: C# Programming
CIS-170: C Programming
CIS-171: Java Programming
CIS-220: Systems Analysis and Design

Complete two courses from the following:
CIS-132: Active Server Pages.Net Programming
CIS-215: Advanced Visual Basic.Net Database Programming
CIS-222: Web Database Development with PHP
CIS-230: C++ Programming
CIS-232: Advanced C# Database Programming
CIS-270: Oracle Database Administration
CIS-271: Advanced Java

Complete 3 credit hours from any one or more of the following areas of study:

Web Development:

CIS-121: Introduction to the Internet
CIS-123: Web Pages
CIS-126: HTML/CSS Web Programming
CIS-172: JavaScript
CIS-211: Web Server Administration
CIS-222: Web Database Development with PHP
CIS-227: Web Authoring
CIS-235: Advanced Flash

Networking:

CIS-105: Desktop Operating System Concepts
CIS-109: Apple Support
CIS-113: Wireless LANs
CIS-114: Introduction to Novell NetWare Administration
CIS-124: Introduction to Windows Server Administration
CIS-157: A+ Hardware
CIS-158: A+ Operating Systems
CIS-212: Networking II
CIS-229: UNIX System Administration
CIS-295: Network Design and Implementation

Programming and Databases:

CIS-132: Active Server Pages.Net Programming
CIS-160: COBOL Programming
CIS-162: Perl Programming
CIS-186: Game Programming
CIS-215: Advanced Visual Basic.Net Database Programming
CIS-230: C++ Programming
CIS-232: Advanced C# Database Programming
CIS-270: Oracle Database Administration
CIS-271: Advanced Java
CIS-272: Project Management
CIS-280: Information Assurance and Security
CIS-297: Special Topics in Computer Information Systems
CIS-298: Special Topics in Computer Information Systems
CIS-299: Special Topics in Computer Information Systems

Job Experience Training:

CIS-190: Co-op in Computer Information Systems
CIS-290: Co-op in Computer Information Systems

Minimum Credit Hours: 38.0

ELECTIVE COURSES

Minimum Credit Hours: 3.0

Complete as many additional 100-level or above courses as necessary to reach the 60 credit hours required for the Associate in Applied Science degree.

For assistance choosing electives, please see an advisor.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Computer Information Systems

ASSOCIATE IN APPLIED SCIENCE

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> Davenport University
> Eastern Michigan University
> Ferris State University
> Franklin University
> Lawrence Technological University
> Madonna University
> Siena Heights University
> University of Detroit Mercy
> University of Michigan - Dearborn
> Walsh College
> Wayne State University

Career Opportunities

ComputerWorld Magazine reports Information Technology (IT) job hiring is on the rise for the third straight year with programming and application development jobs #1 with 61% of all IT managers surveyed reporting that they will hire in this area in the next twelve months. Source: **http://www.computerworld.com/s/article/358381/9_Hot_Skills_for_2012**.

Career Opportunities:

> Programmer
> Systems Analyst
> Application Developer
> Software Engineer
> Database Administrator
> Project Manager

Computer Information Systems — Application Developer

Certificate of Achievement
Program Code: APPDEV.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Anthony Conti • (313) 845-6355 • tconti@hfcc.edu • Technology Bldg • Room: E-162F

Program Information

Description

Provides instruction and training in the highly marketable Information Technology (IT) area of Microsoft .NET application development. Application Developer certificate courses listed can be applied to an Associate in Applied Science within the Computer Information Systems program. The College is a member of Microsoft's MSDN Academic Alliance program. This allows students to download the professional version of Visual Studio for free.

Learning Outcomes

- Design, create and manipulate with an enterprise database.

- Write computer programs using object oriented programming language.

- Explain the client – server model of web development and client and server – side web pages.

Degree Specific Requirements

REQUIRED CORE COURSES

CIS-111: SQL for Database Development
CIS-130: C# Programming
CIS-132: Active Server Pages.Net Programming
CIS-232: Advanced C# Database Programming

Minimum Credit Hours: 13.0

Minimum Number Of Credits To Graduate

13.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Courses in the Application Developer certificate provide excellent preparation for the Microsoft certification programs designed to take your IT skills and career to the next level.

Career Opportunities

- Application developer for C# applications
- Application developer for ASP.NET Internet applications
- Database Administrator for SQL Server database

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Computer Information Systems – Information Assurance

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

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Computer Information Systems — Information Assurance

Associate in Applied Science
Program Code: INFOASSUR.AAS

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Marrci Conner • (313) 845-4021 • mrconner2@hfcc.edu • Technology Bldg • Room: E-162J

Program Information

Description

Prepares students for a career in the computer information systems information assurance field. As the world becomes more dependent on information technology, the security of information becomes critical. Henry Ford College is a member of the International Cyber-Security Education Consortium, and offers an interdisciplinary program leading to an Associate in Applied Science degree that emphasizes technical security, ethical conduct, legal and regulatory compliance, law enforcement and development of strategic security plans. Students complete an interdisciplinary core of study and can tailor electives to their career or transfer interest.

In April, 2006, the Information Assurance Courseware Evaluation (IACE) Review Committee of the National Security Agency's National Information Assurance Education and Training Program (NIETP) certified that Henry Ford College's Information Assurance courseware meets all of the elements of the Committee on National Security Systems (CNSS) National Training Standard for Information Systems Security (INFOSEC) Professionals NSTISSI-4011.

Learning Outcomes

- Operate a personal computer and productivity software installed on it, including Microsoft Office, file management, the Internet/Web, e-mail, and input/output/storage devices

- Explain the importance of personal responsibility and security in a technological world, including copyright laws, netiquette, ethics, privacy issues, and security threats

- Explain networking standards, protocols, transmission media, and hardware

- Describe the fundamentals of information security, the various threats to business continuity, and legal, ethical and professional issues relative to Information Security

- Develop a comprehensive security plan, including risk analysis, legal, regulatory, physical, data and personnel threats

- Describe the role of various disciplines in Information Assurance in the development of comprehensive security measures and guidelines

- Demonstrate proficiency in national, Michigan and Wayne County policies, threats and vulnerabilities of systems, legal elements of protection and prosecution, countermeasures, risk management, trust, organizational personnel

- Analyze situations as to technological, policy and educational vulnerabilities and develop solutions and recommendations

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete at least three hours from the following:
   BMA-110: Business Math

Computer Information Systems – Information Assurance

ASSOCIATE IN APPLIED SCIENCE

MATH-115: College Algebra
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Pre-calculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses
for this program.

REQUIRED CORE COURSES

CIS-112: Introduction to Networking
CIS-124: Introduction to Windows Server Administration
CIS-125: Principles of Programming Logic
CIS-129: Introduction to UNIX with Shell Scripting
CIS-158: A+ Operating Systems
CIS-175: Digital Forensics I
CIS-275: Digital Forensics II
CIS-280: Information Assurance and Security
CIS-296: Information Assurance Methodology
CNT-260: Network Security
CRJ-131: Introduction to Law Enforcement and Criminal Justice
CRJ-132: Police Administration – Staff and Line Operations
CRJ-134: Criminal Investigation
CRJ-234: Criminalistics: Criminal Investigation Laboratory Techniques

Minimum Credit Hours: 47.0

REQUIRED SUPPORT COURSES

Complete 6 credit hours from any one or more of the following areas
of study.

Criminal Justice track:

CRJ-135: Juvenile Justice
CRJ-136: Introduction to Corrections
HPE-142: Advanced First Aid

Networking track:

CIS-157: A+ Hardware
CIS-229: UNIX System Administration
CIS-295: Network Design and Implementation
CNT-110: CCNA: Networking I
CNT-120: CCNA: Networking II
CNT-210: CCNA: Networking III
CNT-220: CCNA: Networking IV
CIS-272: Project Management

Software Engineering track:

CIS-111: SQL for Database Development
CIS-130: C# Programming
CIS-162: Perl Programming
CIS-170: C Programming
CIS-171: Java Programming
CIS-220: Systems Analysis and Design
CIS-232: Advanced C# Database Programming
CIS-271: Advanced Java

World Language track:

ARA-131: Elementary Arabic I
ARA-132: Elementary Arabic II
FRE-131: Elementary French I
FRE-132: Elementary French II
FRE-231: Second-Year French III
FRE-232: Second-Year French IV
GER-131: Elementary German I
GER-132: Elementary German II
GER-231: Second-Year German III
GER-232: Second-Year German IV
SPN-131: Elementary Spanish I
SPN-132: Elementary Spanish II
SPN-231: Second-Year Spanish III
SPN-232: Second-Year Spanish IV

Job Experience track:

CIS-190: Co-op in Computer Information Systems
CIS-290: Co-op in Computer Information Systems

Minimum Credit Hours: 6.0

Students should consult with an adviser before course selection.
The 6 credit hour requirement is intended for concentration in
world language, networking, software engineering or criminal
justice.

Minimum Number Of Credits To Graduate

68.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If
you were admitted prior to this year, please check your requirements
under the Program Evaluation section of WebAdvisor.

Computer Information Systems – Information Assurance

ASSOCIATE IN APPLIED SCIENCE

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
University of Detroit Mercy

Career Opportunities

Law Enforcement
Secure Software Engineering
Language Specialist
Network Security Specialist

Computer Information Systems – Network Administration

ASSOCIATE IN APPLIED SCIENCE

Computer Information Systems — Network Administration

Associate in Applied Science
Program Code: CISPNETWRK.AAS

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Brent Fulton • (313) 845-6426 • brent@hfcc.edu • Technology Bldg • Room: E-162I

Program Information

Description

Covers a wide range of topics within the computer networking and system administration fields. Included within the program are Cisco CCNA courses covering the setup and configuration of switches, routers, VLAN's, VPN's, and WANs. Security, Wireless LANs, Voice over IP and OS Virtualization courses are also required. Microsoft Windows Server and Unix/Linux are the two main network server operating systems that students perform various administrative tasks including installation, configuration, user account creation, file system security, DNS, DHCP, network printing and performance monitoring just to mention a few. Students may also focus on computer repair and operating systems troubleshooting.

Learning Outcomes

- Install, maintain, and administer Windows Server operating system.
- Develop the programming logic required for system scripts.
- Interface with the Unix/Linux operating system, including the vi editor, file management, and shell scripting.
- Install, maintain, and administer the Unix/Linux operating system.
- Develop a comprehensive security plan and create security policies to mitigate network vulnerabilities.
- Design, implement, and document a comprehensive network environment.
- Install, configure, and troubleshoot network devices.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geograph]
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete one of the following:
   ENG-131: Introduction to College Writing
   ENG-132: College Writing and Research
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   BMA-110: Business Math
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

Computer Information Systems – Network Administration

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

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Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

CIS-113: Wireless LANs
CIS-124: Introduction to Windows Server Administration
CIS-125: Principles of Programming Logic
CIS-129: Introduction to UNIX with Shell Scripting
CIS-229: UNIX System Administration
CIS-242: Voice Over IP (VoIP)
CIS-244: NAS and Virtualization
CIS-295: Network Design and Implementation
CNT-110: CCNA: Networking I
CNT-120: CCNA: Networking II
CNT-210: CCNA: Networking III
CNT-220: CCNA: Networking IV

Choose one of the following courses:
CIS-280: Information Assurance and Security Or
CNT-260: Network Security

Complete 7 credit hours from any one or more of the following areas:

Networking:

CIS-105: Desktop Operating System Concepts
CIS-109: Apple Support
CIS-112: Introduction to Networking
CIS-157: A+ Hardware
CIS-158: A+ Operating Systems
CIS-212: Networking II
CIS-280: Information Assurance and Security
CNT-260: Network Security
CNT-270: CCNA Security
CNT-291: CCNP - Routing
CNT-293: CCNP - Switching
CNT-295: CCNP - Network Troubleshooting

Special Topics:

CIS-297: Special Topics in Computer Information Systems
CIS-298: Special Topics in Computer Information Systems
CIS-299: Special Topics in Computer Information Systems

Job Experience:

CIS-190: Co-op in Computer Information Systems
CIS-290: Co-op in Computer Information Systems

Minimum Credit Hours: 52.0

Minimum Number Of Credits To Graduate

67.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Prepares students for a number of Industry Certification Exams, including Comp-TIA A+, Comp-TIA Network+, Comp-TIA Security+, Microsoft Windows Server Administration (MCP), and Cisco Systems Certified Network Associate (CCNA). These certification tests are administered at HFC's M-TEC Center, 3601 Schafer Rd., Dearborn, MI 48126, **313-317-6600**. Payment and scheduling of these exams are through the Pearson-Vue Web site (**http://www.pearsonvue.com**).

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Ferris State University
Lawrence Technological University

Career Opportunities

• PC Software Installation
• PC Hardware Installation
• Network Administration
• Computer Network Support Specialist
• Network Control and Systems Technician
• LAN/WAN Technician

Computer Information Systems — Web Development

Certificate of Achievement
Program Code: WEBDEV.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

David Maier • (313) 845-9890 • djmaier@hfcc.edu • Technology Bldg • Room: E-162H

Program Information

Description

Prepare graduates for an entry-level position as a Web Developer, Webmaster, Web Administrator, Web Programmer or Multimedia Developer. The Web Development Certificate distinguished itself with extensive hands-on laboratory experience using the latest technology and software. Industry-experienced, full-time faculty provide the highest quality instruction on the latest web authoring integrated development environments, graphics and design techniques, client and server-side coding and scripting, back-end technologies, multimedia and animation tools, and project management principles.

Learning Outcomes

• Explain the client – server model of web development and develop client and server – side web pages.

• Implement JavaScript to provide dynamic, client – side services.

• Develop and publish a web site utilizing web authoring and content management software.

Degree Specific Requirements

REQUIRED CORE COURSES

ART-107: Photoshop
ART-108: Introduction to Animation
CIS-122: Web Internet Technologies
CIS-126: HTML/CSS Web Programming
CIS-172: JavaScript
CIS-222: Web Database Development with PHP
CIS-227: Web Authoring

Minimum Number Of Credits To Graduate

24.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

CIW Foundations (**http://www.ciwcertified.com/**)

ComTIA i-Net+ (**http://www.comptia.org/**)

Adobe Certified Professional (**http://www.adobe.com/support/certification/**)

Career Opportunities

The U.S. Department of Labor, Bureau of Labor Statistics lists computer occupations as 5 out of the top 20 fastest growing occupations in the economy for 2004-2014. The Michigan Department of Labor and Economic Growth projects the highest number of new career opportunities between 2002 and 2012 (25.8%) to be in the computer and mathematics industries with an average starting salary of $62,000. Money Magazine and Salary.com 2006 Best Jobs in America report lists computer-related occupations as 2 of the top 7 career opportunities on the basis of salary, opportunities, advancement, creativity, flexibility, and stress.

Career Opportunities:

Web Administrator
Webmaster
Web Developer
Multimedia Developer
Web Programmer

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Computer Networking Academy – CCNA

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE

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Computer Networking Academy — CCNA

Certificate of Achievement
Program Code: COMPNET.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Kathryn Fitzner • (313) 317-1570 • kfitzner@hfcc.edu • Technology Bldg • Room: E-164G

Program Information

Description

Provides students with the skills for designing, building, and maintaining computer networks. The College offers a preparation program for CCNA (Cisco Certified Network Associate) and CCNP (Cisco Certified Network Professional) industry certifications. Cisco certifications are consistently rated among the most highly valued certifications within the IT industry by both employers and IT professionals. The CCNA certificate program consists of four courses and is designed to be completed within one year. Students learn how to install and configure Cisco routers and switches in multi-protocol local and wide area networks, perform basic troubleshooting and improve network performance and security. The CCNA courses are also part of the required core courses for the Associate of Applied Science in Computer Information Systems - Network Administration and are electives for the Associate of Applied Science in Computer Information Systems - Information Assurance.

Learning Outcomes

• Design, implement and document a comprehensive network environment.

• Install, configure and troubleshoot network devices.

ACCREDITATION

The College's Computer Networking Academy is Cisco-approved.

Degree Specific Requirements

REQUIRED CORE COURSES

    CNT-110: CCNA: Networking I
    CNT-120: CCNA: Networking II
    CNT-210: CCNA: Networking III
    CNT-220: CCNA: Networking IV

Minimum Credit Hours: 16.0

ELECTIVE COURSES

These courses are suggestions for electives:
    CNT-103: Network Infrastructure
    CNT-215: Health Information Networking
    CNT-270: CCNA Security

    No electives are required for completion of the certificate.

Minimum Credit Hours: 0.0

Minimum Number Of Credits To Graduate

16.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

    PC Support Specialist
    Network Administrator
    Help Desk Technician
    Network Engineer
    Network Technician
    Other IT related fields

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

BUSINESS AND COMPUTER TECHNOLOGY

Computer Software Applications

CERTIFICATE OF ACHIEVEMENT

Computer Software Applications

Certificate of Achievement
Program Code: COMPSOFTAPP.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Diane Smith • (313) 845-9702 • dlsmith1@hfcc.edu • Liberal Arts Bldg • Room: K-319D

Program Information

Description

Provides students with the opportunity to improve their computer software applications literacy and job skills required, in today's modern business environment, by many occupations. Students in the program will receive training in word processing, spreadsheet, database, presentation, and web pages applications software. The certificate in Computer Software Applications offers evidence to employers of a certain level of proficiency in the application of computer software.

The certificate is often combined with an associate's degree to improve a employability. The certificate can be used as a building block toward a Certificate in Office Administration and/or a degree in Administrative and Information Management.

Learning Outcomes

- Operate word-processing software using Microsoft office.
- Operate spreadsheet software using Microsoft office.
- Operate database software using Microsoft using office.
- Operate presentation software using Microsoft office.

Degree Specific Requirements

REQUIRED CORE COURSES

BCA-125: Introduction to the Internet and Web Pages
BCA-143: Word Processing
BCA-145: Spreadsheets
BCA-147: Database Applications
BCA-152: Presentation Software
CIS-100: Introduction to Information Technology

Minimum Credit Hours: 17.0

Minimum Number Of Credits To Graduate

17.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Successful completion of BCA-143: Word Processing, BCA-145: Spreadsheet Applications, BCA-147: Database Applications, and BCA-152: Presentation Graphics will provide students with sufficient knowledge and skills to take the Microsoft Office Specialist (MOS) exams for Word, Excel, PowerPoint, and Access.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Culinary Arts

Bachelor of Science
Program Code: CULIN.BS

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Eric Gackenbach • (313) 317-1572 • epgackenbach@hfcc.edu • Student Center • Room: M-163C

Program Information

Description

Provides opportunities for students to build character, leadership, and technical skills that are necessary for success in the global industry of hospitality and tourism. Builds on Henry Ford's ACFEF-accredited Culinary Arts associate degree and Hotel/Restaurant Management associate degree.

Learning Outcomes

- Execute a menu from start to finish in compliance with ACF category F and G standards for edible hot and cold food

- Relate restaurant operations and scenarios to FDRP standards and procedures

- Based on MLCC and MRA standards, assess when and how beer, wine and spirits are served in a licensed establishment

- Based on NRA standards, decide how to handle various types of food in order to prevent foodborne illness

- Incorporate professional work behaviors to complete 300 hours of supervised internship

- Organize examples of various segments (Non-Commercial, Lodging, Sports & Leisure, Restaurant, Casino) and job opportunities in the Hospitality Industry

- Combine principles of Management, Marketing, Accounting, Finance and Economics as they relate to decision making in the Hospitality Industry

ACCREDITATION

The Culinary Arts Associate in Applied Science is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC). The department has also earned the Exemplary Program Award symbolizing the highest educational standards recognized by the ACFEFAC. The award is presented to programs that have proven consistent compliance with all ACFEFAC accreditation requirements, along with excellent management of the program. ACFEFAC is recognized by the Council on Higher Education Accreditation (CHEA).

Courses in the Hospitality Management curriculum are supported by materials and certification exams from the American Hotel & Lodging Educational Institute, National Restaurant Association Educational Foundation, and Federation of Dining Room Professionals.

Instructors receive training and certifications from the American Hotel & Lodging Educational Institute, The National Restaurant Association Educational Foundation, the Federation of Dining Room Professionals and the American Culinary Federation.

Degree Specific Requirements

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Bachelor of Science degrees require at least 30 credits total including at least three credits from each of the seven areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

Complete one of the following:
MATH 104: Mathematics for Food Service Careers
MATH 110: Intermediate Algebra
MATH-115: College Algebra
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III
MATH-289: Differential Equations

6. **Humanities:**

Complete three classes as described below:

Complete 8 credit hours of Foreign Language classes from any of the prefixes below:
ARA
CHN
FRE
GER
ITAL
SPN

Complete one other non-performance based Humanities course from the list below:
ART-107: Photoshop
ART-108: Flash
ART-110: InDesign
ART-119: Art Education for the Elementary
ART-121: Art History Survey I (Ancient to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-130: History of Graphic Design
ART-135: Art Appreciation
ART-172: Color Theory
ART-209: Maya
ART-221: Medieval Art
ART-224: Art of Islam
ART-225: Asian Art: Art of India and Southeast Asia
ART-226: African and Afro American Art
ART-227: History of Arab Art & Architecture
ART-290: Study Abroad in Art History
ENG-231: Introduction to Literature - Poetry and Drama
ENG-232: Introduction to the Short Story
ENG-233: Introduction to the Novel
ENG-234: Topics in Literature
ENG-235: American Literature before 1900
ENG-236: American Autobiography
ENG-237: American Literature Since 1900
ENG-239: Reading in Modern American Poetry
ENG-241: Shakespeare
ENG-243: Women's Lives as Literature
ENG-245: The Bible as Literature
ENG-246: Introduction to Children's Literature
ENG-248: African American Literature
HON-251: Great Works
HUM-101: Introduction to the Humanities

HUM-250: Visual and Performing Arts for Teachers
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182 : Interior Design Materials and Components
INTR-280: History of Design - Antiquities to Present
INTR-283: Lighting and Environmental Designs
MUS-130: Music Appreciation
MUS-132: Music Literature
MUS-133: History of Rock & Roll
MUS-134: Music Fundamentals
MUS-138: Music Theory 1
MUS-139: Music Theory 2
MUS-141: Aural Music Skills 1
MUS-142: Aural Music Skills 2
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2
MUS-238: Music Theory 3
Any course from PHIL (Philosophy)
THEA-131: Theatre Appreciation
THEA-135: Introduction to Stage Makeup
THEA-138: Stage Costuming
THEA-238: Theatre History
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture
VTL-263: Intermediate Motion Capture
VTL-264: Advanced Motion Capture Application
VTL-266: Green Screen Visual Effects for Stage and Screen
VTL-267: Stereoscopic Cinematography for Stage and Screen
Any course from WR (World Religions)

7. **Scientific Reasoning:**

Complete two classes as described below:

Complete one course from any of the prefixes below:
ASTR
ATMS
BIO
CHEM, excluding CHEM 091 and CHEM 095
GEOL
PHYS
SCI

Complete one lab science course from the list below:
BIO-110: Biotechnology and Human Affairs
BIO-131: Introduction to Biology
BIO-134: Essentials of Anatomy and Physiology
BIO-135: Microbiology for the Allied Health Sciences
BIO-143: Zoology
BIO-150: Biology: Organisms, Genes, and Ecology
BIO-152: Cells and Molecular Biology
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II
BIO-251: Microbiology
BIO-261: Nucleic Acids
BIO-262: Proteins
CHEM-111: Chemical Skills for Pre-Professional Programs
CHEM-131: Principles of Chemistry
CHEM-132: Principles of Organic and Biological Chemistry
CHEM-141: Principles of General and Inorganic Chemistry I
CHEM-142: Principles of General and Inorganic Chemistry II
GEOL-131: Physical Geology
PHYS-120: Technical Physics I

PHYS-121: Technical Physics II
PHYS-131: General Physics I
PHYS-132: General Physics II
PHYS-133: Principles of Physics
PHYS-231: Engineering Physics I
PHYS-232: Engineering Physics II
PHYS-233: Modern Physics
PSCI-131: Introduction to Physical Science

NOTE:
For this program, General Education minimum credits: 34

REQUIRED CORE COURSES

HOSP-105: Applied Food Service Sanitation
HOSP-211: Introduction to the Hospitality Industry
HOSP-215: International Cooking
HOSP-220: Introduction to Baking and Cooking
HOSP-224: Culinary Skills and Nutritional Cooking
HOSP-226: Fundamentals of Baking
HOSP-251: Dining Room Service and Operations
HOSP-309: Meetings and Event Planning
HOSP-310: Hospitality Supervision and Leadership
HOSP-325: Dining Room Captain
HOSP-330: Food and Nutrition
HOSP-331: Modern and European Pastry
HOSP-340: A'la Carte and Buffet Cookery
HOSP-341: Garde Manger and Menu Planning
HOSP-360: Hospitality Purchasing
HOSP-370: Food and Beverage Controls
HOSP-421: Professional Strategies for Culinarians
HOSP-490: Co-Op in Culinary Arts

Take two credits of either:
HOSP-190: Co-op in Hospitality
HOSP-290: Co-op in Hospitality

Minimum Credit Hours: 66.0

REQUIRED SUPPORT COURSES

BAC-131: Introduction to Financial Accounting
BAC-132: Introduction to Managerial Accounting
BEC-151: Principles of Macroeconomics
BEC-152: Principles of Microeconomics

Minimum Credit Hours: 14.0

ELECTIVE COURSES

Complete a minimum of 6 credits from the following:
HOSP-101: Wines of the World
HOSP-103: Major Wines Grape Varieties
HOSP-107: Artisanal Cheese and Craft Beer
HOSP-145: Ice Carving and Design
HOSP-221: Front Office Procedures and Guest Services
HOSP-235: Ice Carving for the Professional
HOSP-245: Hotel and Restaurant Desserts
HOSP-250: Hospitality and Travel Marketing
HOSP-255: Professional Cake Decorating
HOSP-270: Facilities Management

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

120.0 (Including Options/Electives)

Program Requirements

Additional Program Requirements

Official HFC chef's uniform required to be purchased prior to beginning classes for culinary lab courses - contact department on process to order uniforms. Visit the Hospitality Department in M-163 in the Culinary Arts & Student Center building, or online at **https://culinary.hfcc.edu/** for uniform ordering information.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

National Restaurant Association (Serv-Safe Food Safety, Serv-Safe Alcohol)

American Culinary Federation (Culinary Arts AAS, Certified Culinarian)

Career Opportunities

Chef Manager, Sous Chef, Executive Chef, Restaurant Manager, Hotel Manager

BUSINESS AND COMPUTER TECHNOLOGY

Culinary Arts

Associate in Applied Science
Program Code: CULIN.AAS

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Eric Gackenbach • (313) 317-1572 • epgackenbach@hfcc.edu • Student Center • Room: M-163C

Program Information

Description

Provides opportunities for students to build character, leadership, and technical skills that are necessary for success in the global industry of hospitality and tourism. For a four-year degree in Hospitality Management, continue in Henry Ford College's Bachelor of Science in Culinary Arts degree.

Learning Outcomes

- Execute a menu from start to finish in compliance with ACF category F and G standards for edible hot and cold food.
- Relate restaurant operations and scenarios to FDRP standards and procedures.
- Based on MLCC and MRA standards, assess when and how beer, wine and spirits are served in a licensed establishment
- Based on NRA standards, decide how to handle various types of food in order to prevent food borne illness.
- Incorporate professional work behaviors to complete 300 hours of supervised internship.
- Organize examples of various segments (Non-Commercial, Lodging, Sports & Leisure, Restaurant, Casino) and job opportunities in the Hospitality Industry.

ACCREDITATION

The Culinary Arts Associate in Applied Science is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC). The department has also earned the Exemplary Program Award symbolizing the highest educational standards recognized by the ACFEFAC. The award is presented to programs that have proven consistent compliance with all ACFEFAC accreditation requirements, along with excellent management of the program. ACFEFAC is recognized by the Council on Higher Education Accreditation (CHEA).

Instructors receive training and certifications from the American Hotel & Lodging Educational Institute, The National Restaurant Association Educational Foundation, the Federation of Dining Room Professionals and the American Culinary Federation.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete one of the following:
   BMA-110: Business Math
   MATH-104: Mathematics for Food Service Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

Culinary Arts

ASSOCIATE IN APPLIED SCIENCE

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

HOSP-105: Applied Food Service Sanitation
HOSP-211: Introduction to the Hospitality Industry
HOSP-220: Introduction to Baking and Cooking
HOSP-224: Culinary Skills and Nutritional Cooking
HOSP-226: Fundamentals of Baking
HOSP-251: Dining Room Service and Operations
HOSP-310: Hospitality Supervision and Leadership
HOSP-330: Food and Nutrition
HOSP-331: Modern and European Pastry
HOSP-340: A'la Carte and Buffet Cookery
HOSP-341: Garde Manger and Menu Planning
HOSP-360: Hospitality Purchasing
HOSP-370: Food and Beverage Controls

Complete 2 credit hours from the following courses:*
HOSP-190: Co-op in Hospitality or
HOSP-290: Co-op in Hospitality

Minimum Credit Hours: 50.0

NOTE:
HOSP-220 (2 credit hours), HOSP-224 (3 credit hours), and HOSP-226 (3 credit hours) must be taken concurrently.

*Students may take HOSP-190 (minimum of 150 working hours for 2 semesters) instead of HOSP-290 (minimum of 300 hours in 1 semester).

REQUIRED SUPPORT COURSES

Complete a minimum of 6 credit hours from the following courses:
HOSP-101: Wines of the World
HOSP-103: Major Wines Grape Varieties
HOSP-107: Artisanal Cheese and Craft Beer
HOSP-145: Ice Carving and Design
HOSP-215: International Cooking
HOSP-221: Front Office Procedures and Guest Services
HOSP-235: Ice Carving for the Professional
HOSP-245: Hotel and Restaurant Desserts
HOSP-250: Hospitality and Travel Marketing
HOSP-255: Professional Cake Decorating
HOSP-270: Facilities Management
HOSP-309: Meetings and Event Planning
HOSP-325: Dining Room Captain

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

71.0 (Including Options/Electives)

Additional Program Requirements

Official HFC chef's uniform required to be purchased prior to beginning classes for culinary lab courses - contact department on process to order uniforms. Visit the Hospitality Department in M-163 in the Culinary Arts & Student Center building, or online at **https://culinary.hfcc.edu**/ for uniform ordering information.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Coupled with diverse line level work experience, the student completing this degree may want to consider entry-level supervisory or management position in these areas:

Full Service Hotels
Resort and Travel Destinations
Fine Dining Restaurants
Health Care Services
College and University Dining
Casinos
Conference Centers
Food Sales and Marketing
School Food Service
Catering
Casual Dining Restaurants
Sports, Leisure, and Event Services

Culinary Skills

CERTIFICATE OF ACHIEVEMENT

Culinary Skills

Certificate of Achievement
Program Code: CULSK.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Eric Gackenbach • (313) 317-1572 • epgackenbach@hfcc.edu • Student Center • Room: M-163C

Program Information

Description

Provides the basic foundational skills necessary for quality food production in a professional kitchen. Consists of both lab and lecture classes. Courses may be applied toward an Associate in Applied Science degree in Culinary Arts and/or an Associate in Applied Science degree in Hotel/Restaurant Management.

Learning Outcomes

- Execute a menu from start to finish in compliance with ACF category F and G standards for edible hot and cold food.

- Based on NRA standards, decide how to handle various types of food in order to prevent food borne illness.

ACCREDITATION

The Associate in Applied Science in Culinary Arts at HFC is accredited by the Accrediting Commission of the American Culinary Federation Educational Foundation.

Degree Specific Requirements

REQUIRED CORE COURSES

HOSP-105: Applied Food Service Sanitation
HOSP-220: Introduction to Baking and Cooking
HOSP-224: Culinary Skills and Nutritional Cooking
HOSP-226: Fundamentals of Baking
HOSP-340: A' la Carte and Buffet Cookery

NOTE:
HOSP-220 (2 credit hours), HOSP-224 (3 credit hours), and HOSP-226 (3 credit hours) must be taken concurrently.

Minimum Number Of Credits To Graduate

18.0 (Including Options/Electives)

Additional Program Requirements

Official chef's uniform required to be purchased prior to beginning culinary lab courses. Visit the Hospitality Department, Room M-163 in the Culinary Arts & Student Center (M building), or online at **https://culinary.hfcc.edu/** for uniform ordering information.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Customer Service Professional

CERTIFICATE OF ACHIEVEMENT

Customer Service Professional

Certificate of Achievement
Program Code: CUSRV.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Diane Smith • (313) 845-9702 • dlsmith1@hfcc.edu • Liberal Arts Bldg • Room: K-319D

Program Information

Description

Course work emphasizes oral and written communication skills, workplace skills, and basic computer skills and includes training to work effectively as a Customer Service Representative (CSR). CSRs interact with a company's customers by answering questions about products, services or billings. CSRs, working in a call center or in a customer service department, receive in-bound calls from a company's customers and enter orders for products or services, sell tickets, make reservations, and solve problems that customers are experiencing.

The Customer Service Professional certificate (developed in consultation with businesses such as Blue Cross Blue Shield, Ford Motor Company, DTE Energy, and Oakwood Hospital and Medical Center) may be used as a building block towards earning an Associate in Business degree.

Learning Outcomes

- Compose effective written communication for a business environment.

- Demonstrate effective non-verbal and verbal communication skills for a business environment.

- Employ effective organizational skills in a business environment.

- Practice proper business etiquette and business protocol.

Degree Specific Requirements

REQUIRED CORE COURSES

BCA-101: Computer Keyboarding
CIS-100: Introduction to Information Technology
BBA-133: Business Behavior and Communication
BBA-153: Customer Service
BBA-159: Contact Center/Help Desk Practicum
BBA-110: Business Language Skills
BBA-231: Business Office Communications

Minimum Credit Hours: 20.0

Minimum Number Of Credits To Graduate

20.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Upon successful completion of this program, students qualify to test for the National Retail Federation (NRF) Foundation's Professional Certification in Customer Service, a nationally recognized skill standards and certification exam.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

BUSINESS AND COMPUTER TECHNOLOGY

HENRY FORD COLLEGE

FUTUREDRIVEN

Economics, Finance, and Investing

Area of Study

Contact

Business and Computer Technology Division • (313) 845-9804 •
business@hfcc.edu • Technology Bldg • Room: E-211

Jared Boyd • (313) 845-9697 • jpboyd@hfcc.edu •
Liberal Arts Bldg • Room: K-329

Program Information

Description

Economics is the study of how human beings produce, distribute,
trade, and consume the products and services that are desired. Eco-
nomics is also the study of how societies use scarce resources to satisfy
unlimited wants. Many problems that confront society today have
important economic aspects. An understanding of economics has a
practical value for individuals, both individually and corporately, in the
quality of their decision making. Many students majoring in busi-
ness, engineering, science, or liberal arts may be required to take an
economics course. For specific economic course Descriptions, see BEC
133-Basic Economics, BEC 151-Macro Economics, and BEC 152-Micro
Economics.

Finance is the study of the methods that individuals, businesses, and
organizations use to raise, allocate, and manage monetary resources
over time considering the risk and return involved in those decisions.
Investing is the study of maximizing returns on wealth while minimiz-
ing risk.

Investing includes the study of the markets; types of securities; and
consideration of age, income, and risk tolerance of the individual in-
vestor. BFN 130-Beginning Investment and BFN 141-Personal Finance
are intended for individuals desiring knowledge of personal investing
while BFN 253-Principles of Finance is designed for individuals inter-
ested in learning how businesses make financial decisions.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If
you were admitted prior to this year, please check your requirements
under the Program Evaluation section of WebAdvisor.

Fitness and Sports Center Management

ASSOCIATE IN BUSINESS

HENRY FORD COLLEGE
FUTUREDRIVEN

Fitness and Sports Center Management

Associate in Business
Program Code: FSCMGMT.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Corinne Asher • (313) 845-9867 • casher@hfcc.edu • Liberal Arts Bldg • Room: K-325

Program Information

Description

Assists students in gaining the necessary knowledge and competencies to manage the specialized business functions of an athletic club, fitness center, health club or sports facility. Covers concepts in accounting, customer service, human resources, marketing, management and effective oral and written communication skills. Successful students learn nutrition, current and future trends in exercise, operation of a fitness facility, equipment purchase and maintenance and exercise prescriptions for clients from various demographic populations. Students may also earn a Fitness Leadership Certificate in addition to this degree by successfully completing two Anatomy and Physiology classes and performing an internship.

Learning Outcomes

- Interpret basic financial statements.
- Apply management theory to effectively supervise the human resources of an organization.
- Evaluate management decisions given an organization's relationship to the external business environment.
- Creatively solve common problems in managing an organization.
- Demonstrate effective non-verbal and verbal communication skills for a business environment.
- Demonstrate effective written communication for a business environment.
- Employ computer applications to perform business activities.
- Devise the appropriate exercise prescription for a variety of populations (e.g. obese, athlete, diabetic) following the American College of Sports Medicine guidelines.
- Diagram the facility requirements for a wellness center as defined by the American College of Sports Medicine.
- Perform the appropriate response to the injury situations that are likely to happen in an exercise setting.
- Demonstrate procedures for assessing skill and health-related components of physical fitness based on guidelines from the American College of Sports Medicine.
- Outline the physiological changes that occur to the systems of the body as a result of exercise.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete the following:
   BMA-110: Business Math

NOTE:
For this program, General Education minimum credits: 15

Fitness and Sports Center Management

ASSOCIATE IN BUSINESS

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

BAC-110: Practical Accounting
BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
BBA-153: Customer Service
BBA-252: Principles of Marketing
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding

Minimum Credit Hours: 23.0

REQUIRED SUPPORT COURSES

HPE-140: Lifetime Wellness
HPE-142: Advanced First Aid
HPE-150: Exercise Physiology
HPE-151: Methods for Teaching Exercise
HPE-152: Tests and Measurements
HPE-154: Facilities and Equipment
HPE-253: Nutrition for the Professional

Complete one of the following:
HPEA-117: Strength Training and Physical Conditioning I
HPEA-217: Strength Training and Physical Conditioning II

Complete one of the following:
HPEA-120: Lifetime Fitness
HPEA-110: Volleyball I
HPEA-210: Volleyball II
HPEA-126: Aerobic Dance
HPEA-127: Aquacise

Minimum Credit Hours: 22.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

General Business – No Concentration

ASSOCIATE IN BUSINESS

General Business — No Concentration

Associate in Business
Program Code: GENRL.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Jared Boyd • (313) 845-9697 • jpboyd@hfcc.edu • Liberal Arts Bldg • Room: K-329

Program Information

Description

Enables students to customize their academic programs to meet specific goals and is often used by students who are interested in transferring to a four-year institution. The associate's degree in General Business with no concentration is the most basic and flexible degree offered by the Business and Computer Technology Division. Students may combine this degree with certificate programs offered by the Business and Computer Technology Division or with a degree in another area to improve their employability. The division offers the following certificates:

Bookkeeping
Computer Software Applications
Customer Service Professional
Industrial Distribution – Business Concentration
Office Administration
Office Skills - Fundamentals
Small Business Management and Entrepreneurship
Supervision

Learning Outcomes

- Explain how the activities involved in operating a business connect with one another.

- Evaluate the opportunities and threats resulting from current business trends.

- Evaluate strategies for obtaining, securing, and growing personal wealth.

- Apply math concepts to solve business and finance related problems and conduct business research.

- Employ computer software application programs such as word processing and spreadsheets, to perform ordinary business activities.

- Model appropriate and effective verbal and nonverbal communication in a business setting.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   BMA-110: Business Math
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics

General Business – No Concentration

ASSOCIATE IN BUSINESS

MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

BBA-131: Introduction to Business

Complete one of the following:
BAC-110: Practical Accounting Or
BAC-131: Introduction to Financial Accounting Or
BFN-141: Personal Finance

Complete an additional 12-13 credit hours in the following areas: Accounting (BAC), Business Administration (BBA), Computer Applications (BCA), Business Co-op (BCO), Economics (BEC), Finance (BFN), Business Law (BLW), Management (MGT), and/or Paralegal Studies (PLGL).

Minimum Credit Hours: 20.0

Students should complete as many business-related courses as necessary to have completed a grand total of 20 business-related credit hours.

ELECTIVE COURSES

Minimum Credit Hours: 23.0

Complete elective credits to meet the minimum number of credits required for the Associate's degree.

Students will need 23 - 25 credits of electives depending on General Education selections.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Hotel/Restaurant Management

ASSOCIATE IN APPLIED SCIENCE

Hotel/Restaurant Management

Associate in Applied Science
Program Code: HRMGT.AAS

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Eric Gackenbach • (313) 317-1572 • epgackenbach@hfcc.edu • Student Center • Room: M-163C

Program Information

Description

Provides opportunities for students to build character, leadership, and technical skills critical for success in the global industry of hospitality and tourism. For a four-year degree in Hospitality Management, continue in Henry Ford College's Bachelor of Science in Culinary Arts degree.

Learning Outcomes

- Relate restaurant operations and scenarios to FDRP standards and procedures.

- Based on MLCC and MRA standards, assess when and how beer, wine, and spirits are served in a licensed establishment.

- Based on NRA standards, decide how to handle various types of food in order to prevent food borne illness.

- Incorporate professional work behaviors to complete 300 hours of supervised internship.

- Organize examples of various segments (non-commercial, lodging, sports and leisure, restaurant, casino) and job opportunities in the hospitality industry.

- Combine principles of management, marketing, accounting, finance, and economics as they relate to decision-making in the hospitality industry.

ACCREDITATION

Courses in the Hotel/Restaurant Management curriculum are supported by materials and certification exams from the American Hotel & Lodging Educational Institute, National Restaurant Association Educational Foundation, and Federation of Dining Room Professionals.

Instructors receive training and certifications from the American Hotel & Lodging Educational Institute, The National Restaurant Association Educational Foundation, the Federation of Dining Room Professionals and the American Culinary Federation.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   BMA-110: Business Math
   MATH-104: Mathematics for Food Service Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

NOTE:
For this program, General Education minimum credits: 15

BUSINESS AND COMPUTER TECHNOLOGY

Hotel/Restaurant Management

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

HOSP-105: Applied Food Service Sanitation
HOSP-211: Introduction to the Hospitality Industry
HOSP-220: Introduction to Baking and Cooking
HOSP-221: Front Office Procedures and Guest Services
HOSP-224: Culinary Skills and Nutritional Cooking
HOSP-226: Fundamentals of Baking
HOSP-250: Hospitality and Travel Marketing
HOSP-251: Dining Room Service and Operations
HOSP-270: Facilities Management
HOSP-310: Hospitality Supervision and Leadership
HOSP-325: Dining Room Captain
HOSP-330: Food and Nutrition
HOSP-340: A'la Carte and Buffet Cookery
HOSP-360: Hospitality Purchasing
HOSP-370: Food and Beverage Controls

Complete 2 credit hours from the following:*
HOSP-190: Co-op in Hospitality Or
HOSP-290: Co-op in Hospitality *

Minimum Credit Hours: 50.0

NOTE:
HOSP-220 (2 credit hours), HOSP-224 (3 credit hours), and HOSP-226 (3 credit hours) must be taken concurrently.

*Students may take HOSP-190 (minimum of 150 working hours for two semesters) instead of HOSP-290 (minimum of 300 hours in one semester).

REQUIRED SUPPORT COURSES

Complete one of the following:
BAC-110: Practical Accounting
BAC-131: Introduction to Financial Accounting

Minimum Credit Hours: 4.0

ELECTIVE COURSES

Complete 3 credits from the following:
HOSP-101: Wines of the World
HOSP-103: Major Wines Grape Varieties
HOSP-107: Artisanal Cheese and Craft Beer
HOSP-145: Ice Carving and Design
HOSP-215: International Cooking
HOSP-235: Ice Carving for the Professional
HOSP-245: Hotel and Restaurant Desserts
HOSP-255: Professional Cake Decorating
HOSP-309: Meetings and Event Planning

Minimum Credit Hours: 3.0

Minimum Number Of Credits To Graduate

72.0 (Including Options/Electives)

Additional Program Requirements

Official chef's uniform required to be purchased prior to beginning class for culinary lab courses. Visit the Hospitality Department in M-163 in the Culinary Arts & Student Center building, or online at **https://culinary.hfcc.edu**/ for uniform ordering information.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Coupled with diverse line level work experience, the student completing this degree may want to consider entry-level supervisory or management position in the following areas:

Full service hotels
Restaurants
Event planning
Non-commercial food service
Facilities management
Limited service hotels
Food sales and marketing
Corporate travel
Meeting and hotel sales

Industrial Distribution – Business Concentration

CERTIFICATE OF ACHIEVEMENT

Industrial Distribution - Business Concentration

Certificate of Achievement
Program Code: INDSTBUS.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Diane Smith • (313) 845-9702 • dlsmith1@hfcc.edu • Liberal Arts Bldg • Room: K-319D

Program Information

Description

Provides students with the skills necessary to work in a customer-service capacity in the industrial distribution industry. The industrial distribution channel is the most efficient and cost-effective means of moving products from manufacturers to users. This program emphasizes the development of the oral and written communication skills and customer service skills required to succeed in a distribution system. This certificate program was developed in consultation with the Industrial Career Pathways organization.

Learning Outcomes

- Describe the five methods of transportation and their advantages vs. disadvantages.

- Compose effective written communication for a business environment.

- Demonstrate effective non-verbal communication skills for a business environment.

- Employ effective organizational skills in a business employment.

Degree Specific Requirements

REQUIRED CORE COURSES

- BBA-110: Business Language Skills
- BBA-131: Introduction to Business
- BBA-133: Business Behavior and Communication
- BBA-153: Customer Service
- BBA-159: Contact Center/Help Desk Practicum
- BBA-164: Introduction to Industrial Distribution
- BBA-170: Contemporary Selling
- BBA-231: Business Office Communications
- BCA-101: Computer Keyboarding (or documented proficiency in computer keyboarding)
- BMA-110: Business Math
- CIS-100: Introduction to Information Technology

Minimum Credit Hours: 29.0

Minimum Number Of Credits To Graduate

29.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

International Business

Associate in Business
Program Code: INTLBUSINESS.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Douglas Langs • (313) 845-6363 • dlangs@hfcc.edu • Technology Bldg • Room: E-211G

Program Information

Description

Emphasizes how globalization integrates people, companies, and governments of different nations. Explores how globalization affects the environment, culture, political systems, economic development and prosperity, and societal well-being. Examines the benefits and costs associated with globalization and the impact of international trade, foreign investment, and information technology.

Learning Outcomes

• Define international business (trade and investment) and explain various terms, concepts, and theories that describe the ongoing economic integration and interdependency of countries worldwide.

• Analyze the impact of conducting business internationally with respect to accounting, management, marketing, finance, logistics, and supply chain management.

• Explain the political, legal, economic, and cultural differences of foreign countries and assess their impact on business performance.

• Create effective business documents following the principles of business communication.

• Recognize professional business behavior as well as effective office communications.

• Exhibit computer literacy.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete one:
   GEOG-132: World Regional Geography
   POLS-152: International Relations

2. **Communication:**
   Complete:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete one:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete:
   BMA-110: Business Math

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core and Required Support Courses for this program.

REQUIRED CORE COURSES

BAC-131: Introduction to Financial Accounting
BAC-132: Introduction to Managerial Accounting
BBA-110: Business Language Skills
BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
BBA-231: Business Office Communications
BBA-250: International Business
BBA-252: Principles of Marketing
BEC-151: Principles of Macroeconomics
BEC-152: Principles of Microeconomics
BFN-253: Principles of Finance
BSC-240: Operations and Supply Chain Management
BLW-253: Business Law and the Legal Environment
MGT-230: Principles of Management

Minimum Credit Hours: 46.0

ELECTIVE COURSES

No elective courses are required, but the following is of value to many employers:

BBA-290: Study Abroad in International Business

Minimum Credit Hours: 0.0

Minimum Number Of Credits To Graduate

61.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University

HENRY FORD COLLEGE
FUTUREDRIVEN

Management
ASSOCIATE IN BUSINESS

Management

Associate in Business
Program Code: MNGMT.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Corinne Asher • (313) 845-9867 • casher@hfcc.edu • Liberal Arts Bldg • Room: K-325

Program Information

Description

Assists students in gaining the necessary knowledge and competencies to succeed in acquiring an entry-level or promoting to a higher-level management position. Explores the fundamentals of management, creative problem solving techniques, and interpersonal skills for supervision and team building. The knowledge and skills that successful students obtain in this program are relevant to a variety of business organizations. Students may earn a Certificate in Supervision as they fulfill the requirements of the Management degree program.

Learning Outcomes

- Interpret basic financial statements.
- Apply management theory to effectively supervise the human resources of an organization.
- Evaluate management decisions given an organization's relationship to the external business environment.
- Creatively solve common problems in managing an organization.
- Demonstrate effective non-verbal and verbal communication skills for a business environment.
- Demonstrate effective written communication for a business environment.
- Employ computer applications to perform business activities.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

    Complete one of the following:
    ASL-130: Deaf Culture and the Deaf Community
    EDU-260: History and Civics in Elementary Schools
    GEOG-132: World Regional Geography
    HIST-151: American History I
    HIST-152: American History II
    POLS-101: American Government: Democratic Participation and Civic Engagement
    POLS-131: Introduction to American Government and Political Science
    POLS-152: International Relations
    POLS-200: Introduction to Peace and Conflict Studies
    SOC-131: Introduction to Sociology
    SOC-152: Women, Men, and Society
    SOC-251: Ethnic and Racial Diversity in Society
    WR-131: Religious Traditions in the World

2. **Communication:**

    Complete both of the following:
    ENG-131: Introduction to College Writing
    SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

    Complete the following:
    CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

    Complete one of the following:
    ENG-132: College Writing and Research
    ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

    Complete the following:
    BMA-110: Business Math

NOTE:
For this program, General Education minimum credits: 18

Management

ASSOCIATE IN BUSINESS

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses
for this program.

REQUIRED CORE COURSES

BEC-151: Principles of Macroeconomics
BEC-152: Principles of Microeconomics
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding
MGT-232: Human Resources Management
Complete one of the following:
BBA-290: Study Abroad in International Business
MGT-237: Psychology in the Workplace
MGT-238: Labor-Management Relations
MGT-241: Small Business Management and Entrepreneurship

Complete one of the following:
BAC-110: Practical Accounting
BAC-131: Introduction to Financial Accounting

Minimum Credit Hours: 22.0

REQUIRED SUPPORT COURSES

BBA-110: Business Language Skills
BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
BBA-231: Business Office Communications
BLW-253: Business Law and the Legal Environment

Minimum Credit Hours: 17.0

ELECTIVE COURSES

This program requires three credits of electives. The following are
not required but are suggested as electives.

For assistance selecting electives, please contact the Program
Director.

BBA-250: International Business
BBA-252: Principles of Marketing
BFN-141: Personal Finance
BFN-253: Principles of Finance

Minimum Credit Hours: 3.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If
you were admitted prior to this year, please check your requirements
under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to
help students who want to transfer to other institutions once they
have completed their studies at HFC. Articulation agreements ensure
that graduates from HFC can transfer to another institution and work
towards a bachelor's degree without a loss of coursework completed
at HFC. Transfer guides denote the transferability of HFC coursework
toward specific degree programs at other institutions. It is important
that students who intend to transfer to another institution consult the
appropriate articulation agreements and/or transfer guides to ensure
the transferability of the courses they take to the institution they plan
to attend. Articulation agreements and transfer guides are available
on the HFC Transfer Resources page. For additional resources and as-
sistance with transferring, students are encouraged to work with HFC's
University Transfer, Advising, and Career Counseling Center (**313-845-
9612**, **counseling@hfcc.edu**, Learning Resource Center). Students
enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University

Medical Practice/Facility Business Management

ASSOCIATE IN BUSINESS

Medical Practice/Facility Business Management

Associate in Business
Program Code: MPFBM.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Corinne Asher • (313) 845-9867 • casher@hfcc.edu • Liberal Arts Bldg • Room: K-325

Program Information

Description

Builds on the Medical Insurance Specialist certificate and prepares students to manage the specialized business functions of a medical practice or medical facility. Course work covers medical billing, coding, and insurance claim forms as well as accounting, customer service, management, medical terminology, and effective oral and written communications.

Learning Outcomes

- Interpret basic financial statements.
- Apply management theory to effectively supervise the human resources of an organization.
- Evaluate management decisions given an organization's relationship to the external business environment.
- Creatively solve common problems in managing the business office of a medical or medical related organization.
- Demonstrate effective non-verbal and verbal communication skills for a business environment.
- Demonstrate effective written communication for a business environment.
- Employ computer applications to perform business activities.
- Prepare billing and insurance reimbursement documents to insure proper payment.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total, including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete the following:
   BMA-110: Business Math

NOTE:
For this program, General Education minimum credits: 15

Medical Practice/Facility Business Management

ASSOCIATE IN BUSINESS

HENRY
FORD
COLLEGE

FUTUREDRIVEN

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

BBA-110: Business Language Skills
BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
BBA-153: Customer Service
BBA-231: Business Office Communications
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding

Complete one of the following courses:
BAC-110: Practical Accounting
BAC-131: Introduction to Financial Accounting

Minimum Credit Hours: 26.0

REQUIRED SUPPORT COURSES

AH-100: Medical Terminology
HIT-150: Basic Coding: Theory and Practice
HIT-230: Ambulatory Coding
MOA-100: Medical Office Procedures I - Administrative
MOA-110: Processing Health Insurance Claims
MOA-165: Physician Billing Concepts
MOA-168: Facility Billing Concepts
MOA-181: Medical Collection and Legal Issues
MOA-205: Insurance Coding and Reimbursement

Minimum Credit Hours: 29.0

ELECTIVE COURSES

Minimum Number Of Credits To Graduate

70.0 (Including Options/Electives)

Additional Program Requirements

Students must complete a Criminal Background Check and Drug Screen per Michigan Public Health Code 20713.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

BUSINESS AND COMPUTER TECHNOLOGY

Office Administration

CERTIFICATE OF ACHIEVEMENT

Office Administration

Certificate of Achievement
Program Code: OFFICEADMIN.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Diana Baran • (313) 317-1583 • dbaran@hfcc.edu • Liberal Arts Bldg • Room: K-303

Program Information

Description

Provides students with the knowledge and skills to assume an administrative role in today's modern office environment. Students will learn the most commonly used computer software applications and critical communication and management skills. The program finishes with a capstone course where all aspects of the program are integrated to give students a comprehensive understanding of the operations of contemporary offices. Individuals who are already employed may find that the Office Administration Certificate increases the opportunity for promotion.

While working towards this certificate, students may apply course credits towards certificates in Computer Software Applications and/or Office Skills Fundamentals. The Office Administration Certificate may also be used as a building block towards the achievement of an Associate in Business degree in Administrative and Information Management.

Learning Outcomes

- Compose effective written communication for a business environment.
- Demonstrate effective non-verbal and verbal communication skills for a business environment.
- Employ effective organizational skills in a business environment.
- Practice proper business etiquette and business protocol.
- Use word processing software at a n advanced level.
- Use spreadsheet software at an advanced level.
- Perform financial record keeping.

Degree Specific Requirements

REQUIRED CORE COURSES

BAC-110: Practical Accounting
BBA-110: Business Language Skills
BBA-133: Business Behavior and Communication
BBA-231: Business Office Communications
BBA-235: Office Administration Practicum
BCA-143: Word Processing
BCA-145: Spreadsheets
CIS-100: Introduction to Information Technology
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding

Minimum Credit Hours: 32.0

Minimum Number Of Credits To Graduate

32.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Office Skills – Fundamentals

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE
FUTUREDRIVEN

Office Skills - Fundamentals

Certificate of Achievement
Program Code: OFFSKILLS.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Diana Baran • (313) 317-1583 • dbaran@hfcc.edu • Liberal Arts Bldg • Room: K-303

Program Information

Description

Prepares students to provide basic administrative support under the supervision of office managers, administrative assistants, secretaries, and other office personnel. Students will learn computer keyboarding; the Windows operating system; and the basics of the Microsoft Office Suite of Word, Excel, Access and PowerPoint. Students will review the language arts and learn business grammar and the basic principles underlying business communication to create effective business documents.

Learning Outcomes

- Compose effective written communication for a business environment.

- Demonstrate effective non-verbal and verbal communication skills for a business environment.

- Identify effective organizational skills in a business environment.

- Use word processing software at an advanced level.

Degree Specific Requirements

REQUIRED CORE COURSES

    BBA-110: Business Language Skills
    BBA-133: Business Behavior and Communication
    BBA-231: Business Office Communications
    BCA-101: Computer Keyboarding
    BCA-143: Word Processing
    CIS-100: Introduction to Information Technology

Minimum Credit Hours: 18.0

Minimum Number Of Credits To Graduate

18.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

BUSINESS AND COMPUTER TECHNOLOGY

Paralegal Studies

Associate in Business
Program Code: PARALEGAL.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Rachelle Loomus • (313) 317-4158 • rsloomus@hfcc.edu • Liberal Arts Bldg • Room: K-331

Program Information

Description

Offers students a solid foundation of core legal knowledge and essential skills necessary for a career in the legal profession. A paralegal is employed by a law office, business, or government agency, and performs specifically delegated substantive legal work for which a lawyer is responsible. Graduates may enter the workforce as a paralegal or continue their education by transferring to a four-year baccalaureate-degree institution. Paralegals must work under the supervision of an attorney. Paralegals are not lawyers and are not permitted to provide legal services directly to the public except as permitted by law.

The Paralegal Program at Henry Ford College is approved by the American Bar Association.

Learning Outcomes

- Demonstrate knowledge and understanding of substantive law in one or more areas of practice.
- Prepare legal documents using proper legal reasoning and analysis of issues, facts and law.
- Use critical thinking skills and legal research skills to solve legal problems and make well-reasoned legal and ethical decisions.
- Articulate the structure of the legal system and the paralegal's duties and responsibilities for the delivery of legal services within that system.
- Critically analyze and resolve legal problems and communicate these results in a clear and effective manner, both orally and in writing
- Demonstrate the computer, time management, organizational, and communication skills necessary to work professionally and efficiently in a legal environment.

ACCREDITATION

The Paralegal Studies program is approved by the American Bar Association (ABA).

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total, including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

    Complete two of the following:
    ASL-130: Deaf Culture and the Deaf Community
    GEOG-132: World Regional Geography
    HIST-151: American History I
    HIST-152: American History II
    POLS-101: American Government: Democratic Participation and Civic Engagement
    POLS-131: Introduction to American Government and Political Science
    POLS-152: International Relations
    POLS-200: Introduction to Peace and Conflict Studies
    SOC-131: Introduction to Sociology
    SOC-152: Women, Men, and Society
    SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

    Complete both of the following:
    ENG-131: Introduction to College Writing
    SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

    Complete the following:
    CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

    Complete one of the following:
    ENG-132: College Writing and Research

5. **Quantitative Literacy:**

    Complete one of the following:
    MATH-115: College Algebra
    MATH-131: Mathematics for the Modern World
    MATH-141: Introduction to Statistics
    MATH-150: Finite Mathematics
    MATH-153: Calculus for Business, Life Science, and Social Sciences
    MATH-175: Precalculus

MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III

NOTE:
For this program, General Education minimum credits: 22

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

BLW-253: Business Law and the Legal Environment
PLGL-100: Essential Paralegal Skills
PLGL-110: Legal Ethics
PLGL-115: Property Law
PLGL-126: Legal Research
PLGL-200: Civil Litigation I
PLGL-226: Legal Writing
PLGL-235: Commercial Transactions

Complete three courses from the following:
PLGL-220: Personal Injury Litigation
PLGL-240: Family Law
PLGL-245: Estate Planning and Probate
PLGL-250: Business Organizations
PLGL-299: Special Topics in Law

Minimum Credit Hours: 35.0

REQUIRED SUPPORT COURSES

BBA-110: Business Language Skills

Minimum Credit Hours: 3.0

ELECTIVE COURSES

No elective courses are required, but completing a co-op experience is of value to many employers.

PLGL-190: Co-op in Paralegal Studies Or
PLGL-290: Co-op in Paralegal Studies

Minimum Credit Hours: 0.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Additional Program Requirements

The Paralegal Studies Program at Henry Ford College welcomes transfer students from institutions of higher education. There are no minimal transfer credit requirements. Students may transfer in a maximum of 40 semester credit hours in accordance with Henry Ford College's policy. Of those, students may transfer in a maximum of 12 legal specialty semester credit hours, of which at least 4 must have been earned though traditional classroom instruction. The transfer credits from legal specialty courses must be approved by the Director of the Paralegal Studies Program to ensure that the credit is classified as legal specialty and meets the course objectives of the course for which credit is being awarded. Legal specialty course are defined by the American Bar Association Standing Committee on Paralegals as a course that: (1) covers substantive law or legal procedures or process, (2) has been developed for paralegals, (3) emphasizes practical parale-gal skills, and (4) meets the instructional requirements of ABA G-301.B. Additional requirements for approval of transfer legal specialty credits are:

• The transferring course must be from a program approved by the American Bar Association.

• The course must be considered college level.

• Only courses in which the student has received a grade of 2.0 ("C") or higher may transfer.

• Official transcripts must be sent directly from the student's previous college to HFC.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and as-sistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Chancellor University
Davenport University
Eastern Michigan University
Lawrence Technological University
Madonna University
Siena Heights University
University of Michigan - Dearborn
Walsh College

BUSINESS AND COMPUTER TECHNOLOGY

Restaurant Service

CERTIFICATE OF ACHIEVEMENT

Restaurant Service

Certificate of Achievement
Program Code: RESTSER.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Eric Gackenbach • (313) 317-1572 • epgackenbach@hfcc.edu • Student Center • Room: M-163C

Program Information

Description

Provides a variety of skills that are necessary to address the opportunities and challenges found within the different types of dining operations. An emphasis is placed on remarkable service from servers, managers, and restaurant owners that can lead to winning and retaining customers.

Courses in the Restaurant Service Certificate Program may be applied toward an Associate in Applied Science Degree in Culinary Arts and/or an Associate in Applied Science Degree in Hotel/Restaurant Management.

Learning Outcomes

- Relate restaurant operations and scenarios to FDRP standards and procedures.

- Based on MLCC and MRA standards, assess when and how beer, wine and spirits are served in a licensed establishment.

- Based on NRA standards, decide how to handle various types of food in order to prevent food borne illness.

ACCREDITATION

The Associate in Applied Science in Culinary Arts at HFC is fully accredited by the Accrediting Commission of the American Culinary Federation Educational Foundation.

Degree Specific Requirements

REQUIRED CORE COURSES

HOSP-101: Wines of the World
HOSP-103: Major Wines Grape Varieties
HOSP-105: Applied Food Service Sanitation
HOSP-107: Artisanal Cheese and Craft Beer
HOSP-211: Introduction to the Hospitality Industry
HOSP-251: Dining Room Service and Operations
HOSP-309: Meetings and Event Planning
HOSP-325: Dining Room Captain

Minimum Credit Hours: 17.0

Minimum Number Of Credits To Graduate

17.0 (Including Options/Electives)

Additional Program Requirements

Official HFC chef's uniform required to be purchased prior to beginning classes for culinary lab courses - contact department on process to order uniforms. Visit the Hospitality Department in M-163 in the Culinary Arts & Student Center building, or online at **https://culinary.hfcc.edu**/ for uniform ordering information.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Small Busineness Management & Entrepreneurship

CERTIFICATE OF ACHIEVEMENT

Small Business Management & Entrepreneurship

Certificate of Achievement
Program Code: SMBUSMGMT.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Corinne Asher • (313) 845-9867 • casher@hfcc.edu • Liberal Arts Bldg • Room: K-325

Program Information

Description

Prepares students who are contemplating starting their own business or who currently own and operate their own business. This certificate focuses on accounting and finance, customer service, marketing, and management. Students will prepare a business plan for a business of their choice. The Small Business Management & Entrepreneurship certificate may be used as a building block towards earning an associate's degree in Management.

Learning Outcomes

- Interpret basic financial statements.
- Apply management theory to effectively supervise the human resources of an organization.
- Evaluate management decisions given an organization's relationship to the external business environment.
- Recognize common problems in managing an organization.
- Employ computer applications to perform business activities.

Degree Specific Requirements

REQUIRED CORE COURSES

BBA-131: Introduction to Business
BBA-153: Customer Service
BBA-252: Principles of Marketing
BFN-141: Personal Finance
CIS-100: Introduction to Information Technology
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding
MGT-241: Small Business Management and Entrepreneurship

Complete one of the following courses:
BAC-110: Practical Accounting Or
BAC-131: Introduction to Financial Accounting

Complete one of the following courses:
BAC-141: Computerized Accounting - QuickBooks Or
BAC-146: Computerized Accounting—Peachtree

Minimum Credit Hours: 31.0

Minimum Number Of Credits To Graduate

31.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Supervision
CERTIFICATE OF ACHIEVEMENT

Supervision

Certificate of Achievement
Program Code: SUPERVISION.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Corinne Asher • (313) 845-9867 • casher@hfcc.edu • Liberal Arts Bldg • Room: K-325

Program Information

Description

Assists in developing or improving managerial/supervisory skills. Develops an understanding of basic supervisory principles that is helpful in guiding and directing employees in every type of organization. The Supervision certificate may also be used as a building block towards earning the Associate of Business degree in Management.

Learning Outcomes

- Describe the components of financial statements.
- Apply management theory to effectively supervise the human resources of an organization.
- Evaluate management decisions given an organization's relationship to the external business environment.
- Recognize common problems in managing an organization.
- Demonstrate effective non-verbal and verbal communication skills for a business environment.

Degree Specific Requirements

REQUIRED CORE COURSES

BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding
MGT-232: Human Resources Management

Minimum Credit Hours: 16.0

Minimum Number Of Credits To Graduate

16.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

BUSINESS AND COMPUTER TECHNOLOGY

Supply Chain Management

ASSOCIATE IN BUSINESS

HENRY FORD COLLEGE

FUTUREDRIVEN

Supply Chain Management

Associate in Business
Program Code: SCMGMT.AB

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Douglas Langs • (313) 845-6363 • dlangs@hfcc.edu • Technology Bldg • Room: E-211G

Program Information

Description

Covers the planning, organizing, leading, and controlling of all materials, resources, and information involved in the sourcing, processing, and distributing of products that add value to the wholesale or retail consumer. Focuses on the global coordination and collaboration with partners, suppliers, intermediaries, and third party logistic providers to meet or exceed the ever changing needs of the customer.

Learning Outcomes

- Define supply chain management (SCM) and demonstrate knowledge in order to think critically and be able to evaluate and design SCM strategies necessary to support the firm's global strategic decisions.

- Assess purchasing strategies and procedures, selection of suppliers, outsourcing, and negotiation strategies, price and cost analysis.

- Evaluate the managerial dimensions of operations management which include the design, supply, production, and delivery of goods and services to customers.

- Summarize the five modes of transportation comparing their operating and service characteristics, cost structure, and current challenges.

- Develop the knowledge necessary to become a 21st century front line worker in supply chain management and logistics.

- Pass two nationally recognized certifications issued by the Manufactures Skill Standards Council (MSSC) - the Certified Logistics Associate (CLA) and Certified Logistics Technician (CLT) certifications.

ADMISSION REQUIREMENTS / ELIGIBILITY

Standard HFC admission requirements for eligibility in the program.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete the following:
   GEOG-132: World Regional Geography

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete one of the following:
   BMA-110: Business Math
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 15

BUSINESS AND COMPUTER TECHNOLOGY

Supply Chain Management
ASSOCIATE IN BUSINESS

DEGREE-SPECIFIC REQUIREMENTS

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

BSC-110: Introduction to Supply Chain Management
BSC-120: Technical Foundations of Logistics
BSC-230: Logistics and Distribution Strategy
BSC-240: Operations and Supply Chain Management
BSC-250: Purchasing and Supply Chain Management
BSC-260: Global Logistics and Supply Chain Management

Minimum Credit Hours: 18.0

REQUIRED SUPPORT COURSES

BBA-110: Business Language Skills
BBA-131: Introduction to Business
BBA-231: Business Office Communications
BBA-250: International Business
BCA-145: Spreadsheets
BEC-151: Principles of Macroeconomics
BEC-152: Principles of Microeconomics
MGT-231: Supervision and Teambuilding

Minimum Credit Hours: 25.0

ELECTIVE COURSES

Minimum Credit Hours: 0.0

Complete elective credits to meet the minimum number of credits required for the Associate's degree.

Students will need 0 - 2 credits of electives depending on General Education selections.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Varies by career in SCM. Operations, transportation, and warehouse management may have slightly greater physical risk than will purchasing, systems support, or a supply chain manager.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Wayne State University

Career Opportunities

Customer Service Manager
International Logistics Manager
Inventory Control Manager
Logistics Engineer
Logistics Manager
Logistics Services Salesperson
Logistics Software Manager
Materials Manager
Production Manager
Purchasing Manager
Supply Chain Analyst
Supply Chain Consultant
Supply Chain Manager
Systems Support Manager
Transportation Manager
Vendor Managed Inventory Coordinator
Warehouse Operations Manager

Supply Chain Management Technician

CERTIFICATE OF ACHIEVEMENT

Supply Chain Management Technician

Certificate of Achievement
Program Code: SMTECH.CA

Contact

Business and Computer Technology Division • (313) 845-9804 • business@hfcc.edu • Technology Bldg • Room: E-211

Douglas Langs • (313) 845-6363 • dlangs@hfcc.edu • Technology Bldg • Room: E-211G

Program Information

Description

Presents practical skills and knowledge for front line workers who are interested in entering the field of logistics and supply chain management. Introduces the basic business functions and their relations to the field of supply chain management, logistics, transportation and warehouse management. Provides fundamental reading, writing, mathematics, computer, and spreadsheets skills.

Learning Outcomes

- Develop a working knowledge necessary to become a 21st century front line worker in supply chain management and logistics.

- Pass two supply chain logistic assessments from a nationally recognized organization issued by the Manufactures Skill Standards Council (MSSC); Certified Logistics Associate (CLA) and the Certified Logistics Technician (CLT) certifications.

- Demonstrate a working knowledge and basic skills specifically in the areas of logistics, transportation, and warehouse management.

- Exhibit proper communication, computer, and mathematics skills necessary for an entry-level position in supply chain management.

ADMISSION REQUIREMENTS / ELIGIBILITY

Standard HFC admission requirements for eligibility in the program.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses.

1. **Civil Society & Culture:**
   No required courses.

2. **Communication:**
   No required courses.

3. **Computer Technology:**
   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   No required courses.

5. **Quantitative Literacy:**
   Complete one of the following:
   BMA-110: Business Math
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

NOTE:
For this certificate, General Education minimum credits: 6

REQUIRED CORE COURSES

BSC-110: Introduction to Supply Chain Management
BSC-120: Technical Foundations of Logistics
BSC-230: Logistics and Distribution Strategy
BSC-240: Operations and Supply Chain Management

Minimum Credit Hours: 12.0

REQUIRED SUPPORT COURSES

BBA-110: Business Language Skills
BBA-131: Introduction to Business
BBA-231: Business Office Communications
BCA-145: Spreadsheets

Minimum Credit Hours: 13.0

Minimum Number Of Credits To Graduate

31.0 (Including Options/Electives)

BUSINESS AND COMPUTER TECHNOLOGY

Supply Chain Management Technician

CERTIFICATE OF ACHIEVEMENT

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Varies by career in SCM. Operations, transportation, and warehouse management could have slightly greater physical risk than other positions within a firm.

Career Opportunities

- •Customer Service Manager
- •International Logistics Manager
- •Inventory Control Manager
- •Logistics Engineer
- •Logistics Manager
- •Logistics Services Salesperson
- •Logistics Software Manager
- •Materials Manager
- •Production Manager
- •Purchasing Manager
- •Supply Chain Analyst
- •Supply Chain Consultant
- •Supply Chain Manager
- •Systems Support Manager
- •Transportation Manager
- •Vendor Managed Inventory Coordinator
- •Warehouse Operations Manager

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Arab Cultural Studies

Associate in Arts
Program Code: ARABCULTURAL.AA

Contact

Communications Division • (313) 845-9624 • english@hfcc.edu • Liberal Arts Bldg • Room: K-201

Michael Daher • (313) 845-6457 • mdaher@hfcc.edu • Liberal Arts Bldg • Room: K-243

Program Information

Description

Provides a rigorous academic foundation on which to continue advanced study at major colleges and universities specializing in Arabic language, literature, and cultures. The comprehensive curriculum not only offers the opportunity to develop specific skills, as in translation and foreign language, but also cultivates an informed perspective essential to the practice of public diplomacy within local, national, and international contexts. This program takes a multi-disciplinary approach to the study of Arabic, Arab Americans, and Middle Eastern cultures.

Learning Outcomes

- Demonstrate a capacity to communicate orally and in writing in Arabic.
- Compare and contrast ethical principles and religious ceremonies within Muslim and Christian traditions.
- Identify the geographical boundaries and features of the Arab world.
- Describe the cultural achievements of the Arab world.
- Identify major historical eras in the Arab world.
- Evaluate the causes and consequences of political conflicts in the Arab world.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   GEOG-132: World Regional Geography
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete at least one of the following:
   CIS-100: Introduction to Information Technology
   CIS-221: Instructional Technology for Elementary Teachers
   CIS-223: Instructional Technology for Secondary Teachers

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   Complete at least one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-101: Mathematics for Health Careers
   MATH-103: Technical Mathematics
   MATH-104: Mathematics for Food Service Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra
   MATH-121: Mathematics for Elementary Teachers I
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-221: Mathematics for Elementary Teachers II
   MATH-225: Mathematics for Elementary Teachers III
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

COMMUNICATIONS

Arab Cultural Studies

ASSOCIATE IN ARTS

DEGREE-SPECIFIC REQUIREMENTS

Complete one course from the Wellness Group:

> BFN-130: Principles of Investing
> BFN-141: Personal Finance
> COUN-110: Human Potential Seminar
> COUN-114: Stress Management - A Personal Approach
> COUN-119: Issues in Personal Growth
> COUN-125: Life Work Planning
> COUN-128: Active Parenting
> Any Heath and Physical Education (HPE) course
> Any Health and Physical Education Activity (HPEA) course

Humanities: Degree specific requirements for Humanities are fulfilled within the General Education Communication area and Required Core Courses area.

Science and Mathematics: Degree specific requirements for Science and Mathematics are fulfilled within the General Education Quantitative Literacy area and the Required Support Courses area.

Social Science: Degree specific requirements for Social Science are fulfilled within the General Education Civil Society and Culture group.

NOTE:
For this program, Degree-Specific minimum credits: 2

REQUIRED CORE COURSES

> ARA-131: Elementary Arabic I
> ARA-132: Elementary Arabic II
> ART-224: Art of Islam
> ART-227: History of Arab Art and Architecture
> HIST-261: The Modern Middle East
> WR-130: Introduction to the Academic Study of Religion
> WR-232: Western Religions: Judaism, Christianity, and Islam

Minimum Credit Hours: 23.0

REQUIRED SUPPORT COURSES

Complete a minimum of 2 classes from different disciplines from the following science courses, including one laboratory class:

> Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geology (GEOL), Physical Science (PSCI), Physics (PHYS)

Minimum Credit Hours: 7.0

ELECTIVE COURSES

> Complete a minimum of 4 hours from among the following:
> ANTH-131: Introduction to Anthropology
> ANTH-152: Middle Eastern Peoples and Cultures
> ARA-231: Second-Year Arabic III
> ARA-232: Second-Year Arabic IV
> ART-221: Medieval Art
> HIST-112: Medieval-Early Modern World History
> POLS-200: Introduction to Peace and Conflict Studies

Minimum Credit Hours: 4.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> Michigan State University
> University of Michigan - Ann Arbor
> University of Michigan - Dearborn
> Wayne State University

Career Opportunities

Some occupations of Bachelors and Graduate-level Arab Culture majors are:

> Teacher
> Journalist
> Translator
> Researcher
> Community Organizer
> Attorney
> Homeland Security Professional
> Foreign Service Officer

Students may wish to transfer out of state to continue their studies of Arab Culture at such academic institutions as:

> New York University, New York, NY
> Georgetown University, Washington, D.C.
> University of Chicago, Chicago, IL
> University of Utah, Salt Lake City, UT

COMMUNICATIONS

Deaf Studies

Certificate of Achievement
Program Code: 05.0211

Contact

Communications Division • (313) 845-9624 • english@hfcc.edu • Liberal Arts Bldg • Room: K-201

Lori Slaber • (313) 845-6499 • lslaber@hfcc.edu • Liberal Arts Bldg • Room: K-204

Program Information

Description

Provides an understanding of Deaf culture and ensures that students reach an intermediate level of competency in American Sign Language (ASL) skills. ASL courses are aligned with the American Council on the Teaching of Foreign Languages (ACTFL) proficiency standards. The proficiency goal for students in this program is to reach "Intermediate Mid" on the ACTFL scale. According to ACTFL, an Intermediate Mid speaker is able to successfully handle uncomplicated communicative tasks in straightforward social situations, such as the exchange of information relating to the self and physical and social needs. In addition to responding to direct questions, these speakers are also able to ask a variety of simple questions. Intermediate Mid listeners (attenders) are able to accurately comprehend simple exchanges of sentence-length speech relating to familiar or predictable topics. Students may wish to continue studies at the university level; however, upon completion of the program, students are eligible for work in various fields, including education and social services. Graduates wishing to pursue a bachelor's degree may transfer most if not all of the course work toward that degree.

Learning Outcomes

- Initiate, conduct and terminate context-specific conversations with Deaf or ASL users
- Compare and contrast American mainstream culture with Deaf culture
- Finger-spell words, numbers and loan signs clearly and accurately in regard to articulation, rate of transition from letter to letter, word configuration and distinction between words, moving from one letter to the next in a rhythmic fashion without extraneous movements
- Interpret ASL to grammatically-correct and correctly-phrased English
- Describe psychological development of hearing and non-hearing individuals and communities

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. For this program:

1. **Civil Society & Culture:**
   Complete:
   ASL-130: Deaf Culture and the Deaf Community

2. **Communication:**
   Complete:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   no required courses

4. **Critical Thinking & Information Literacy:**
   no required courses

5. **Quantitative Literacy:**
   no required courses

NOTE:
For this program, General Education minimum credits: 6

REQUIRED CORE COURSES

ASL-131: Elementary American Sign Language I
ASL-132: Elementary American Sign Language II
ASL-135: Fingerspelling and Numbering
ASL-231: Second-Year American Sign Language III
ASL-232: Second-Year American Sign Language IV
PSY-131: Introductory Psychology

Minimum Credit Hours: 21.0

Minimum Number Of Credits To Graduate

27.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Education
Health careers
Social work
Pre-ASL Interpreter
Legal, financial, state and local government services and public accommodations

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

COMMUNICATIONS

English

Area of Study

Contact

Communications Division • (313) 845-9624 • english@hfcc.edu • Liberal Arts Bldg • Room: K-201

Jennifer Ernst • (313) 845-6385 • jlernst@hfcc.edu • Liberal Arts Bldg • Room: K-208

Program Information

Description

The English Department offers a wide selection of courses for students with varying interests, from improving basic reading, writing, and study skills to appreciating and understanding great works of American and world literature.

The literature classes offer students both introductory surveys and more advanced and specialized studies of the literature of specific genres and historical periods. Students who are seeking an initial acquaintance can take ENG 231-Introduction to Literature: Poetry and Drama and ENG 233-Introduction to the Novel. Those interested in more specialized courses may choose from two American literature surveys, Shakespeare, Children's literature, and African-American literature, among others. ENG 139-Creative Writing is offered in he fall and winter semesters.

ENG 135-Business and Technical Writing and Research trains students to write effectively in the workplace, and it is also available to people already working in local business and industry who desire to improve their professional writing skills. Sections of this course are among those taught in computer-equipped classrooms and online, thus emphasizing computer technology as a critical tool in workplace communication. Students should contact University Transfer, Advising, and Career Counseling Center for ENG 135 transferability to other institutions.

ENG 079 and ENG 081 (developmental reading courses) and ENG 088 and ENG 093 (developmental writing courses) and are offered every semester to provide students the opportunity to improve their basic skills and ensure their success at Henry Ford College. Students placement scores determine which courses are appropriate, given their existing reading and writing skills.

If students placement scores indicate no need for developmental courses, they should enroll in ENG 131-Introduction to College Writing, a freshman-level course which stresses critical reading, critical thinking, and critical writing. Either ENG 132-College Writing and Research, or ENG 135-Business and Technical Writing and Research follows successful completion of ENG 131.

Some students for whom English has not been the primary language need specialized courses to prepare hem for academic success. The English Department offers one developmental writing course for such students (ENG 092), and one developmental reading courses (ENG 082). Enrollment is restricted to 20 per class in these courses in order to ensure that these students receive individual attention.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Journalism

CERTIFICATE OF ACHIEVEMENT

HENRY
FORD
COLLEGE

FUTURE DRIVEN

Journalism

Certificate of Achievement

Contact

Communications Division • (313) 845-9624 •
english@hfcc.edu • Liberal Arts Bldg • Room: K-201

Peter Kim • (313) 317-6682 • pkim@hfcc.edu •
Campus Safety • Room: N-204

Program Information

Description

Provides students with skills and knowledge in journalism, including news writing, feature writing, media writing, editing, layout, graphic design, business, marketing, print publishing, online publishing, video and audio production, and broadcast journalism. Students will have the opportunity to get hands on knowledge with newspaper production by contributing to and working on the campus newspaper in both print and online formats.

Learning Outcomes

- Demonstrate professional standards in journalism.
- Assess ethical standards in journalism.
- Demonstrate standard journalism news writing skills, including researching, gathering, reporting, and editing.
- Demonstrate telecommunications media skills in news writing, audio and video editing, and broadcast journalism.
- Demonstrate creative problem solving strategies in news production.
- Demonstrate multimedia approaches to news production.
- Collaborate with team members in the production of the campus newspaper in both print and online formats.
- Assess the role of advertising in news production.
- Demonstrate business, marketing, and design skills in the production of the campus newspaper.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. For this program:

1. **Civil Society & Culture:**
    No required courses.

2. **Communication:**
    Complete one:
    ENG-131: Introduction to College Writing
    ENG-131A: Introduction to College Writing (ALP)
    ENG-131H: Honors Introduction to College Writing

3. **Computer Technology:**
    No required courses.

4. **Critical Thinking & Information Literacy:**
    Complete one:
    ENG-132: College Writing and Research
    ENG-132H: Honors College Writing and Research
    ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
    No required courses.

Minimum Credit Hours:
For this program, General Education minimum credits: 6

Degree-Specific Requirements

No additional degree-specific courses required. Fulfill the General Education, Required Core and Required Support Courses for this program.

REQUIRED CORE COURSES

ENG-139: Creative Writing
JOUR-131: News Writing
JOUR-132: Advanced News Writing
TCM-131: Introduction to Telecommunication
TCM-151: Digital Audio Editing
TCM-157: Digital Video Editing
TCM-251: Audio Production
TCM-257: Video Production I
TCM-261: Broadcast Journalism

Minimum Credit Hours: 23.0

REQUIRED SUPPORT COURSES

Complete one:
BCO-190: Co-op in Business
BCO-290: Co-op in Business
COMM-190: Co-op in Communications
COMM-290: Co-op in Communications
JOUR-295: Business Manager
JOUR-296: Copy Editor
JOUR-297: Layout Editor
JOUR-298: Creative and Online Editor
JOUR-299: Editor in Chief
SSCO-190: Co-op in Social Science
SSCO-290: Co-op in Social Sciences

Minimum Credit Hours: 1.0

ELECTIVE COURSES

Complete one:
ENG-231: Introduction to Literature: Poetry and Drama
ENG-232: Introduction to the Short Story
ENG-233: Introduction to the Novel
ENG-234: Topics in Literature
ENG-235: American Literature Before 1900
ENG-236: American Autobiography
ENG-237: American Literature Since 1900
ENG-239: Reading in Modern American Poetry
ENG-241: Shakespeare
ENG-243: Women's Lives in Literature
ENG-245: The Bible as Literature
ENG-246: Introduction to Children's Literature

ENG-248: African American Literature
HON-151: Honors Colloquium: History and Culture of Detroit
HON-161: Honors Colloquium
HON-251: Great Works This course is open to all students, including but not exclusively students in the Honors Program.
TCM-132: Film History and Criticism
TCM-241: Media Writing

Minimum Credit Hours: 3.0

Minimum Number Of Credits To Graduate

33.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Reporters, correspondents, and broadcast news analysts are expected to face strong competition for jobs, because of both the number of workers who are interested in entering the field and the projected employment declines of both occupations. Those with experience in the field - experience often gained through internships or by working for school newspapers, television stations, or radio stations - should have the best job prospects. Multimedia journalism experience, including shooting and editing pieces, should also improve job prospects. Because stations are increasingly publishing content on multiple media platforms, particularly on the web, employers may prefer applicants who have experience in website design and coding. In addition, opportunities will likely be better in small local newspapers or television and radio stations. Competition will be particularly strong in large metropolitan areas, at national newspapers with higher circulation figures, and at network television stations.

Career Opportunities

Advertising
Author
Business Administration
Business & Technical Writing
Broadcast News
Civil Service
Communications
Correspondent
Criminal Justice
Editor
Freelance Journalist
Graphic Design
Marketing
Media Writer
Pre-Law
Publishing
Public Relations
Reporter
Teacher
Telecommunications

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

COMMUNICATIONS

Liberal Arts

Associate in Arts
Program Code: GENRL.AA

Contact

Communications Division • (313) 845-9624 •
english@hfcc.edu • Liberal Arts Bldg • Room: K-201

Jennifer Ernst • (313) 845-6385 • jlernst@hfcc.edu •
Liberal Arts Bldg • Room: K-208

Program Information

Description

Completion of course work in the Liberal Arts Associate of Arts degree signifies that the student is broadly educated in the major divisions of higher learning: humanities, natural sciences, mathematics, social sciences, and fine arts. The student has acquired methods of study and habits of thought which are demonstrated by an ability to analyze problems, make appropriate value judgments, and express conclusions in cogent style. The student devotes a portion of study to in-depth concentration of one subject.

Students in the Liberal Arts Associate of Arts degree should select electives to reflect both the student's interests and the requirements of the intended transfer institution. Students are encouraged to consult the transfer guide sheets located in the University, Transfer, Advising, and Career Counseling Center.

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

Communication: Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

Computer Technology: Demonstrate skills for computer technology, including internet, network and advanced file operations. Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

Quantitative Literacy: Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. Associate in Arts degrees requires at least 24 credits total including at least three credit hours from the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete at least three of the following:
   ASL-130: Deaf Culture and the Deaf Community
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   Complete at least one of the following:
   BMA-110: Business Math
   CHEM-131: Principles of Chemistry
   ENGR-232: Statics
   MATH-100: Basic Technical Mathematics
   MATH-101: Mathematics for Health Careers

MATH-103: Technical Mathematics
MATH-104: Mathematics for Food Service Careers
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits
must total: ....24 credits

Degree-Specific Requirements

Wellness: Complete 2 credits from the following:

BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: Complete at least 8 Humanities credits, including any applicable Humanities courses taken from the General Education: Civil Society & Culture group, from the following:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

Science and Mathematics: Complete at least 8 Science and Mathematics credits, including Science and Mathematics courses taken from the General Education: Quantitative Literacy group, from:

Astronomy (ASTR); Atmospheric Studies (ATMS); Biology (BIO); Chemistry (CHEM); Geology (GEOL); Geographic Information Systems (GIS); Mathematics (MATH); Physical Science (PSCI); Physics (PHYS); Science (SCI)

Social Science: Complete at least 8 Social Science credits, including Social Science courses taken from the General Education: Civil Society & Culture group, from:

Anthropology (ANTH); Criminal Justice (CRJ); Economics (BEC); Geography (GEOG); History (HIST); Political Science (POLS); Psychology (PSY); Social Science (SSC); Sociology (SOC)

NOTE:
For this program, Degree-Specific minimum credits: 14

ELECTIVE COURSES

Complete additional 100-level or above courses to reach the 60 credits required for Associate in Arts degrees.

Maximum Credit Hours Necessary:.. 22

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

COMMUNICATIONS

Telecommunication

Associate in Arts
Program Code: TELEC.AA

Contact

Communications Division • (313) 845-9624 •
english@hfcc.edu • Liberal Arts Bldg • Room: K-201

Susan McGraw • (313) 845-9842 • scmcgraw@hfcc.edu •
Fine Arts Bldg • Room: F-129

Program Information

Description

This program provides a comprehensive foundation of study and practice in the areas of media production, editing, writing and management for radio, television, film, broadcast journalism, public relations, and media performance. This specialization is developed through a range of courses incorporating both theoretical classroom academic knowledge and creative hands-on use of hardware, software, studios and labs combined with real-world assignments and experience so as to provide successful students with a solid foundation for pursuing a four-year mass communication degree at a transfer institution or as a stepping stone into the field.

Learning Outcomes

- Assess the issues relating to media literacy and standard ethical responses using conventional practices of media criticism.

- Demonstrate telecommunication skills including media writing, script analysis, audio and video performance, and criticism.

- Demonstrate the use of industry-standard software and hardware to produce and edit audio and video works.

- Debate and describe historical and contemporary issues as they apply to the legal aspects of the telecommunication industry.

- Argue and solve problems while working in a live field environment to lead a team effort in performing, producing, editing or directing a telecommunication project.

- Collaborate effectively with team members in an ensemble performance or production scenario when applicable.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   SOC-131: Introduction to Sociology
   Complete at least one of the following:
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete at least one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete the following:
   BMA-110: Business Math

   Complete at least 3 credit hours from the following:
   CHEM-131: Principles of Chemistry
   MATH-100: Basic Technical Mathematics
   MATH-103: Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Pre-calculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-280: Calculus III

MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Wellness: Complete at least one of the following:

BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: This category is satisfied by the Required Core Courses in this degree program.

Science and Mathematics: Complete additional credit hours from the subject areas below to reach at least 8 Science and Mathematics credit hours:

Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geographic Information Systems (GIS), Geology (GEOL), Mathematics (MATH), Physical Science (PSCI), Physics (PHYS), Science (SCI).

Social Science: Complete additional credit hours from the subject areas below to reach at least 8 Social Science credit hours:

Anthropology (ANTH), Criminal Justice (CRJ) , Economics (BEC), Geography (GEOG), History (HIST), Political Science (POLS), Psychology (PSY), Social Science (SSC), Sociology (SOC)

NOTE:
For this program, Degree-Specific minimum credit hours: 10

REQUIRED CORE COURSES

TCM-131: Introduction to Telecommunication
TCM-132: Film History and Criticism
TCM-151: Digital Audio Editing
TCM-157: Digital Video Editing
TCM-241: Media Writing
TCM-243: Media Performance
TCM-251: Audio Production
TCM-257: Video Production I
TCM-261: Broadcast Journalism

Minimum Credit Hours: 23.0

REQUIRED SUPPORT COURSES

Complete 3 credit hours of business area course requirements from courses with the following course prefixes:

Accounting (BAC); Business Administration (BBA); Business Computer Application (BCA); Business Cooperative Education (BCO); Economics (BEC); Finance and Investing (BFN); Business Law (BLW); Business Math (BMA); Paralegal (PLGL); Management (MGT)

Minimum Credit Hours: 3.0

ELECTIVE COURSES

These courses are suggestions for electives:
BBA-252: Principles of Marketing
TCM-189: WHFR Staff Training
TCM-258: Film/Video Production II
TCM-294: Telecommunication Internship

Minimum Credit Hours: 3.0

Minimum Number Of Credits To Graduate

63.0 (Including Options/Electives)

Additional Program Requirements

The purchase of minimal support materials including binders, a flash drive, and additional items will be required for program project needs. Individual instructors will provide specific materials lists.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Lawrence Technological University
Wayne State University
Madonna University
University of Michigan - Dearborn
Siena Heights University

Career Opportunities

Management: Producer, Director, or Promotions Coordinator

Production: Video or Television Producer, Director, Camera Operator, Audio or Radio Producer or Audio or Video Editor

Writing: Screenwriter, Script Writer, Media Theorist, Media Critic or Broadcast/News Journalist

Talent: Radio, TV, or Voiceover Announcer, Broadcast Journalist or Performer

COMMUNICATIONS

World Languages

Area of Study

Contact

Communications Division • (313) 845-9624 • english@hfcc.edu • Liberal Arts Bldg • Room: K-201

Lori Slaber • (313) 845-6499 • lslaber@hfcc.edu • Liberal Arts Bldg • Room: K-204

Program Information

Description

Language courses fulfill requirements or elective options in many HFC programs as well as programs at four-year institutions. Our courses (except ARA-130) transfer to most colleges and universities. The World Languages Department consistently offers:

- Four semesters of American Sign Language, Modern Standard Arabic, and Spanish

- Three semesters of French and German

- Two semesters of Mandarin Chinese and Italian

- A Deaf Studies Certificate

The first class in each language sequence is designed for students with no previous experience. All courses not only develop listening, speaking, writing, and reading abilities, but also an understanding of U.S. and global communities and cultures. Each course is aligned with the American Council on the Teaching of Foreign Language's proficiency standards for second-language learning. Textbook-based assignments and activities are complimented by in-class oral practice, group work, and a variety of technologies, media, and other supplementary materials.

In order to determine proper placement, please consult with the appropriate faculty member:

Tazeen Ayub (Arabic) at (313) 317-6847 or tayub@hfcc.edu

Maggie Rutkowski (Spanish) at (313) 317-6887 or mrutkowski2@hfcc.edu

Lori Slaber (all other languages) at (313) 845-6499 or lslaber@hfcc.edu

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

COMMUNICATIONS

Firefighter/Paramedic

ASSOCIATE IN APPLIED SCIENCE

Firefighter/Paramedic

Associate in Applied Science
Program Code: FFPAR.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Shannon Bruley • (313) 317-6582 • sbruley@hfcc.edu •
Health Careers Education Ctr • Room: G-132I

Program Information

Description

Offers a career pathway for individuals seeking an entry-level position with a full-time municipal fire service. Course work provides a combination of academic education with necessary hands-on skills. Degree recipients earn an Associate in Applied Science, an EMT-Basic license, paramedic certification, Firefighter I & II certification, and valuable field clinical experience.

Learning Outcomes

- Maintain equipment and facilities.
- Respond appropriately to calls.
- Demonstrate scene control.
- Conduct a proficient primary and secondary patient assessment.
- Identify and manage patient illness and/or injury.
- Determine when to provide pt. transport.
- Effectively document the incident and patient information.
- Perform post-incident management tasks.
- Perform professionally within the firefighter/paramedic field.
- Provide proof of successful testing for Fire Ground Training.

ACCREDITATION

Henry Ford College is an approved EMS Program Sponsor through the Michigan Department of Community Health, Bureau of EMS & Trauma Systems.

ADMISSION REQUIREMENTS / ELIGIBILITY

The first year of studies for the Emergency Medical Service degree is open enrollment as long as students meet the college level reading and writing scores identified below:

COMPASS Reading score of 82 or better

Assessment score sufficient for placement in ENG-131.

This requirement may also be fulfilled by successful completion of required developmental English courses or completion of ENG-131 or its equivalent with a C grade or better.

All first year EMS courses must be taken concurrently and passed concurrently with a C or better. Students wishing to enter the second year of studies, which includes the paramedic core, must apply through the EMS office in Health Careers. This level of studies begins every FALL semester. Acceptance to the College is granted to most applicants and does not constitute nor guarantee admission to the paramedic core studies. Early advising for course sequencing is highly recommended. Students are accepted into the program based on a "first-qualified, first-accepted" basis. All potential placements must be registered on the wait list in the EMS office.

For EMS 200-level courses, students will need to satisfy the following prerequisites:

EMT-Basic MI License (with a current National Registry Certificate preferred), BIO-233, BIO-234,

Math proficiency as demonstrated by successful completion of MATH-080 OR MATH-0891, MATH-0892, MATH-0893, and MATH-0894 or their equivalent with a C grade or better OR COMPASS Algebra score of 46 or better

See first year Reading and English requirements. This applies to all students entering the second year as well.

A grade of C or better is required for successful completion of all courses (core and support) listed in the EMS program. Students not receiving a C or better cannot continue in the program until they have successfully repeated the course(s) earning a C or better. Students who do not successfully complete all co-requisite courses in the EMS Program cannot continue with that same class of students. Therefore, students who fail must repeat all coursework (200+ and up) from the beginning up to the point that they failed, and then progress in sequence with the new class of paramedic students. Students who need to repeat paramedic must request to be put on the waiting list for the following year. Re-admittance is subject to seat capacity and prior performance.

Tech. Prep. Public Safety Pathway (PSP) completers from the Downriver Career Tech Program. In order to receive "TR" credits, you must complete (with a C or better) at least six credit hours of 100+ level course work (at HFC) for each year of HS PSP credit earned. Bring a student copy of your HFC transcript along with a copy of your FINAL HS transcript to the EMS Program Director. This is necessary to process a request for credits to be posted by the Office of the Registrar. Do not ask your Counselor, Health Career Advisor or Instructor to post credits.

This process must be initiated by the EMS Program Director. If you are unsure if you earned credit, contact the EMS Program Director before scheduling courses. The courses in the PSP Program are as follows:

Year 1- CRJ-131 (3 credit hours), MFR (5 credit hours, no transfer equivalent)*

Year 2- CRJ-135 (3 credit hours), AH-100 (4 credit hours), and EMS (8 credit hours, no transfer equivalent)*

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

Firefighter/Paramedic

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
FUTUREDRIVEN

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete one of the following:
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology
   WR-131: Religious Traditions in the World

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete one of the following:
   CIS-100: Introduction to Information Technology
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**
   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**
   Complete one of the following:
   CHEM-131: Principles of Chemistry
   MATH-100: Basic Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

NOTE:
For this program, General Education minimum credits: 16

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

EMS-100: EMT-Basic Fundamentals
EMS-107: Basic Procedures Lab
EMS-109: EMT-Basic Clinical Externship
EMS-200: Paramedic I
EMS-206: Paramedic Procedures Lab I
EMS-210: Paramedic II
EMS-216: Paramedic Procedures Lab II
EMS-220: Paramedic III
EMS-226: Paramedic Procedures Lab III

EMS-230: Paramedic IV
EMS-240: Paramedic V
EMS-290: Advanced Clinical I
EMS-295: Advanced Clinical II
EMS-299: Advanced Clinical III

Complete Firefighter I and Firefighter II certification (9 credit hours).*

Minimum Credit Hours: 55.0

> **NOTE:**
> A minimum of 'C' grade is required in all Required Core Courses.
>
> *The 55 minimum credit hours includes the 9 credit hours for the Firefighter I and Firefighter II certificates that are available at HFC from the training academy. To receive this credit on your transcript see the EMS program director after you have completed your first semester of paramedic studies (200-level or higher EMS course work).

REQUIRED SUPPORT COURSES

BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 8.0

Minimum Number Of Credits To Graduate

79.0 (Including Options/Electives)

Additional Program Requirements

Health Appraisal

Each student is required to complete a Health Appraisal Form, copies of which are available in the Health Careers Office. This appraisal includes a physical, blood titers (to validate immunity to childhood immunizations), TB test, Hepatitis B and boosters if necessary. Actual lab results from the titers need to be submitted with the appraisal to the program. The cost for this appraisal is in addition to the basic tuition and fee schedule.

Students in the EMS program must meet the same physical and mental requirements as emergency medical technicians. A representative job profile, also available in the Health Careers Office, lists the specific physical and mental requirements as well as the environmental conditions of the occupation.

Students must have basic health insurance coverage during clinical courses. Students must maintain a current Healthcare Provider CPR card from the American Heart Association.

Criminal Background Check and Drug Screen

Consistent with Section 20173 of the Michigan Public Health Code and the requirements of our clinical affiliates, a Criminal Background Check and Drug Screen* is required for all students in EMS programs prior to beginning clinical assignments. The cost for this test is in addition to the basic tuition and fee schedule.

Students with felony convictions on their record should not enroll into the program as we have a zero-tolerance stance from our clinical affiliates. If such individuals are granted an expungement, then they would be considered for eligibility. Students with a history of alcohol

HEALTH SCIENCES

Firefighter/Paramedic

ASSOCIATE IN APPLIED SCIENCE

related driving offenses or felony convictions will find it difficult if not impossible to gain employment in public safety careers.

Students who are not cleared for clinical through the Health Appraisal, Criminal Background Check, and Drug Screen will not be able to complete the EMS education programs.

Uniforms

Uniform shirts are provided through the program at the Basic EMT level. Pants, shoes, work belt, stethoscope and exam fees are in addition to the basic tuition and fee schedule.

Job Placement

Information about career placement and job success is available through either the Health Careers Office or the College's Job Placement Office.

Program Duration Limits / Updates / Changes

Once a student is admitted/enrolled into the paramedic portion of the EMS degree, that student must complete with that same group of students. If for any reason a student must stop attending after successfully completing any portion thereof, and wishes to complete, the student must reapply through the EMS office for the desired year of return. Because of the rapid changes in healthcare, legislation and resulting course content, successfully completed EMS classes must be repeated in order to assure competence. This applies to all second year students who start, stop, and then return for completion. Early advising through the EMS office is essential.

The College continuously attempts to improve each program and as a result, courses and requirements may be modified. Curriculum, course content, and program criteria are subject to change by action of the College faculty and administration. Contact the Health Careers Office at **313-845-9877** for any current program updates, or visit **www.hfcc.edu**.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

In emergency medical services, both in school and on the job, exposure to infectious diseases and latex may be minimal to moderate depending on the setting in which students are working. Exposure to illness and infectious disease is an occupational risk for all health care workers.

People should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines can reduce the risk to a minimum. People who have latex sensitivity or allergies should consult with a physician prior to entering the program for guidance on the merits of continuing in a health care career.

Registry / Certification / Licensure Exam Information

EMT-Basic Certification and Paramedic Certification

The paramedic program at HFC reflects the new national curriculum, and all successful completers are eligible to take the National Registry certification exams. The College reserves the right to change policies and course requirements in effect at the time of catalog publication.

The EMS portion of the program is constantly updated to meet the changing needs of the profession. This is reflected in the high success rate of our graduates both on the National Registry and in practice.

If an individual is a convicted felon, it could disqualify him/her from obtaining the necessary National Registry Certification. Visit the National Registry EMS Policy for details. After obtaining a National Registry Certificate, individuals can apply for a Michigan Licensure, which is necessary to practice EMS as a profession. If an individual is a convicted felon, questions regarding potential licensure should be directed to the Michigan Department of Community Health, Bureau of Health Professions, or go to the following web site: **http://www.michigan.gov/mdch**.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Employment opportunities range from municipal fire services to field and hospital-based emergency care positions. Firefighting positions are highly competitive which is why we encourage all students to complete the Associate in Applied Science as a Firefighter/Paramedic. Students who successfully complete the full program can transfer to Siena Heights University, without loss of credit, in order to complete a bachelor degree (inverted major with Bachelor of Applied Science). This positions our graduates well above many entry-level applicants for coveted firefighter positions.

There is a great need for paramedic providers. The job outlook is promising and continues to grow.

Medical Assistant

Certificate of Achievement
Program Code: MASST.CA

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Elizabeth Hoffman • (313) 845-6466 • ehoffman1@hfcc.edu •
Health Careers Education Ctr • Room: G-133B

Program Information

Description

A Level II (complex skills) certificate designed to prepare professional multi-skilled individuals for employment in physician's offices, medical clinics, laboratories and other ambulatory health care facilities. Emphasizes administrative and clinical skills in the classroom and laboratory under directed practical experience in physician offices, clinics, and ambulatory care settings, teen health centers, and in the public school system.

Externships are arranged by program faculty utilizing many of the clinical agencies throughout the region.

Learning Outcomes

- Perform entry level patient assessment and care in an ambulatory setting showing proficiency in patient safety, wellness and education based on scope of practice and national standards.

- Demonstrate mathematical processes related to administering medication, mensuration of a patient using various methodologies, and reading clinical/laboratory equipment and graphs.

- Demonstrate clinical lab procedures, safety and emergency procedures along with patient preparation in the ambulatory and inpatient care setting.

- Communicate effectively using verbal, non-verbal, and written communication as it relates to various health care providers and businesses.

- Perform administrative duties based on scope of practice as it relates to finances, billing and insurance, and effective practice management.

ACCREDITATION

The Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (**www.caahep.org**) upon the recommendation of the Medical Assistant Education Review Board (MAERB).

Commission on Accreditation of Allied Health Education Programs, 1361 Park St., Clearwater, FL 33756, **727-210-2350**.

ADMISSION REQUIREMENTS / ELIGIBILITY

A minimum high school grade-point-average of C+ (2.5) or a minimum average score of 55 on the GED test, or a minimum college grade-point-average of C (2.25) for both transfer students and Henry Ford College students.

A COMPASS Reading score of 84 or higher or successful completion of ENG-081.

A COMPASS Pre-Algebra score of 39 or higher or successful completion MATH-074 or MATH-0771, MATH-0772, MATH-0773, AND MATH-0774 with a C grade or better.

Health Careers typing test at 45 words/min or better or successful completion of BCA-101 with a grade of B or better

The program is restricted, has a limited enrollment, and admits students based on space availability. Admission is on a first-come, first-served basis. Students must see the Health Careers advisor for admission to the program and are highly encouraged to complete their admission requirements as early as possible.

Degree Specific Requirements

REQUIRED CORE COURSES

AH-100: Medical Terminology
MOA-100: Medical Office Procedures I - Administrative
MOA-110: Processing Health Insurance Claims
MOA-120: Medical Office Computer Applications
MOA-150: Medical Office Assistant Procedures II-Clinical
MOA-170: Medical Correspondence
MOA-190: Medical Office Externship

Minimum Credit Hours: 23.0

Students must maintain a minimum C grade or better in all MOA required and support courses including the last in the sequence, MOA 190.

ACCREDITATION standards require that students do not receive compensation/payment, monetary or otherwise, from any clinical site for any portion of their clinical practium (MOA 190-Medical Office Externship).

REQUIRED SUPPORT COURSES

HCS-124: Basic Health Assessment
MATH-101: Mathematics for Health Careers
PSY-131: Introductory Psychology

Complete one of the following options:
BIO-134: Essentials of Anatomy and Physiology
OR
BIO-233: Anatomy and Physiology I And
BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 13.0

Minimum Number Of Credits To Graduate

36.0 (Including Options/Electives)

HEALTH SCIENCES

Medical Assistant
CERTIFICATE OF ACHIEVEMENT

Additional Program Requirements

ACCREDITATION standards require that students do not receive compensation/payment, monetary or otherwise, from any clinical site for any portion of their clinical externship (MOA 190 – Medical Office Externship).

In order to begin the clinical procedures course of the MOA Program, MOA 150, students must meet the following pre-requisites:

- MOA 100, MOA 110, MOA 120, and BIO 134 or BIO 233/234 all with a C grade or better
- During the program the students will be required to submit proof of all of the following by designated program deadlines:
- Active health insurance coverage
- Completion of physical examination
- Two-step tuberculosis PPD test (2-step TB test)
- Evidence of required immunizations and titers.
- American Heart Association, Basic Life Support for Healthcare Providers certification (AHA-BLS for Healthcare Providers card) valid beginning MOA 150 and 6 months post MOA 190 (may be satisfied by AH 105).
- American Heart Association, Heartsaver First Aid certification valid prior to beginning MOA 150 and 6 months post MOA 190.
- Valid driver's license or state issued identification card with a photo
- Criminal background check and drug screen

Program Duration Limits / Updates / Changes

All educational experiences are under the guidance of the MOA program. Student progress is evaluated in the classroom, laboratory and clinical setting throughout the program. Progression in the program is based upon the student meeting the following requirements:

- Adherence to the program requirements outlined in the MOA Student Handbook.
- Achievement of a minimum grade of C or better in all MOA and required support courses including the last in the sequence (MOA 190).
- Maintenance of an overall cumulative grade-point-average (GPA) of 2.25 or better.
- All MOA courses taken at HFC must be successfully completed within three consecutive calendar years.

The Medical Assisting program continuously updates its program of study to meet changing health care needs and the requirements of the accreditation agency and clinical affiliates, thus the College reserves the right to change policies at any time.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Applicants who consider a career in medical assisting should be aware that during the course of their education and subsequent employment they are likely to working in situations where exposure to infectious diseases is possible. This is an occupational risk for all health care workers. Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines can reduce the risk to a minimum. Thorough education in infection control procedures is an important part of the medical assistant program of study.

Latex Allergies

Early recognition of sensitization to natural rubber latex (NRL) is crucial to prevent the occurrence of life-threatening reactions in sensitized healthcare workers. The Medical Assistant Program Faculty strongly advises that students sensitized or allergic to latex consult a physician for guidance on the merits of continuing in a healthcare career. NRL sensitized students who choose to continue in their program must notify the program director upon admission.

Registry / Certification / Licensure Exam Information

Upon completion of the Medical Assistant Program, students graduating from medical assistant programs accredited through Commission on accreditation of Health Education Programs (CAAHEP) or Accreditation Bureau of Health Education Schools (ABHES)) are eligible and required to sit for either of the following certification examinations for medical assistants. Each credential is equal in weight, importance and acceptance for future employment.

CMAs and RMAs receive a better salary than those without credentials. Employers prefer medical assistants from accredited programs with profession al certification.

The American Association of Medical Assistant (AAMA) offers the CMA (Certified Medical Assistant) examination. The CMA is a national certification.

The American Medical Technologist (AMT) offers the RMA (Registered Medical Assistant) examination. The RMA credential is an international certification.

Career Opportunities

According to recent reports from the U.S. Bureau of Labor Statistics, employment of medical assistants is expected to grow much faster than the average for all occupations through 2030 as the health care industry expands because of technological advances in medicine and a growing aging population.

Employment growth will be driven by the increase in the number of group practices and other health care facilities that need a high proportion of support personnel, particularly the flexible medical assistant who can handle both administrative and clinical duties.

Information about career placement and job success is available through either the Health Careers Office or the College Placement Office.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

HEALTH SCIENCES

Medical Insurance Specialist

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE
FUTUREDRIVEN

Medical Insurance Specialist

Certificate of Achievement
Program Code: MEDINS.CA

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Elizabeth Hoffman • (313) 845-6466 • ehoffman1@hfcc.edu •
Health Careers Education Ctr • Room: G-133B

Program Information

Description

A Level II (Complex Skills Certificate) certificate designed to provide entry-level skills for medical billing specialists. These individuals process the information necessary for reimbursement of health care services. The medical insurance biller is responsible for collection of preadmission/pretreatment insurance information through submission of claims to insurance carrier or patient. Verification of insurance coverage and determination of whether any predetermination, pre-certification, or second-opinion requirements exist is another important aspect of the job.

Training is provided in verification of insurance coverage, assignment of diagnostic and procedural codes, as well as both manual and computerized claim preparation. Review and follow-up procedures for the major carriers are included in addition to posting and balancing of accounts. Students will be able to recognize, evaluate, and interpret inconsistencies, discrepancies, and inaccuracies in the billing procedure. Physician billing as well as facility billing procedures are developed.

Medical Insurance Specialist is the second stage of the three step program option. The students may elect to stop-out at the end of any one of the three stages depending upon their career and educational objectives.

Medical Receptionist, Level I Certificate, 16.5 credit hours

Medical Insurance Specialist, Level II Certificate, 50 credit hours

Medical Practice/Facility - Business Management Associate in Business degree, 70 credit hours

Interested students must work closely with the Health Career Advisor in order to develop their own individual educational plan. For additional information or an appointment, students should contact the Health Careers Office at **313-845-9877**.

Learning Outcomes

- Demonstrate the process of producing procedural and diagnostic claims for the major insurance carriers, both manually and electronically.

- Demonstrate the correct process of insurance procedures in the areas of physician and facility billing.

- Communicate effectively with clients, providers, and insurance agencies.

ADMISSION REQUIREMENTS / ELIGIBILITY

Admission to the program is based on upon satisfying the following admission requirements:

A minimum high school grade-point-average of C+ (2.5) or a minimum average score of 55 on the GED test, or a minimum college grade-point-average of C (2.25) for both transfer students and Henry Ford College students.

A COMPASS Reading score of 84 or higher or successful completion of ENG-081.

A COMPASS Pre-Algebra score of 39 or higher or successful completion MATH-074 or MATH-0771, MATH-0772, MATH-0773, AND MATH-0774 with a C grade or better.

Health Careers typing test at 45 words/min or better or successful completion of BCA-101 with a grade of B or better

Degree Specific Requirements

REQUIRED CORE COURSES

AH-100: Medical Terminology
BBA-110: Business Language Skills
BBA-153: Customer Service
BBA-231: Business Office Communications
BMA-110: Business Math
HIT-150: Basic Coding: Theory and Practice
HIT-230: Ambulatory Coding
MOA-100: Medical Office Procedures I - Administrative
MOA-110: Processing Health Insurance Claims
MOA-165: Physician Billing Concepts
MOA-168: Facility Billing Concepts
MOA-181: Medical Collection and Legal Issues
MOA-205: Insurance Coding and Reimbursement

Complete one of the following:
BAC-110: Practical Accounting
BAC-131: Introduction to Financial Accounting

Minimum Credit Hours: 45.0

REQUIRED SUPPORT COURSES

Complete one of the following:
BIO-134: Essentials of Anatomy and Physiology
OR
BIO-233: Anatomy and Physiology I And
BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 5.0

Minimum Number Of Credits To Graduate

50.0 (Including Options/Electives)

HEALTH SCIENCES

Additional Program Requirements

- Adherence to the program requirements outlined in the MOA/MR/MIS Student Handbook.

- Achievement of a minimum grade of C or better in all MOA required core and required support courses.

- Maintenance of an overall cumulative GPA of 2.25 or better.

Program Duration Limits / Updates / Changes

HFC continuously attempts to improve each program, and as a result courses and requirements may be modified. Curriculum, course content, and admission criteria are subject to change by action of the College faculty and administration.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Upon completion of the Medical Insurance Specialist program students are eligible to take the certification examination for Certified Medical Administrative Specialists (CMAS). Students may also consider taking the Certified Medical Billing Insurance Examination (CMBI) offered by the American Association of Professional Coders. These credentials are necessary for employment in administrative medical office duties.

Career Opportunities

The employment outlook for medical insurance specialists is good, but very competitive especially for entry-level positions. Information about career placement is available through the College Placement Office which also assists students in finding employment.

All health care employers are now requiring criminal background checks and drug screens of their new applicants. Students must complete criminal background check and drug screen per Michigan Public Health Code 20713 for admission into the Medical Insurance Specialist program - see below.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

HEALTH SCIENCES

Medical Practice – Clinical Management

ASSOCIATE IN APPLIED SCIENCE

Medical Practice — Clinical Management

Associate in Applied Science
Program Code: MPCM.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Elizabeth Hoffman • (313) 845-6466 • ehoffman1@hfcc.edu •
Health Careers Education Ctr • Room: G-133B

Program Information

Description

Focuses on the preparation and the foundation necessary to prepare medical assistants for increasing management responsibility within the medical office or clinic and to perform routine administrative duties in physicians' offices, clinics, and other ambulatory health care facilities. Students may elect to stop out at either one of the following two stages depending upon career or educational objectives.

> Medical Assistant, Level II Certificate of Achievement, 36 credit hours

> Medical Practice - Clinical Management Associate in Applied Science degree, 67 credit hours.

Credits in this certificate program may be applied to the Associate in Applied Science degree centered around the Medical Assistant.

Learning Outcomes

- Perform entry level patient assessment and care in an ambulatory setting showing proficiency in patient safety, wellness and education based on scope of practice and national standards.

- Demonstrate mathematical processes related to administering medication, mensuration of a patient using various methodologies, and reading clinical/laboratory equipment and graphs.

- Demonstrate clinical lab procedures, safety and emergency procedures along with patient preparation in the ambulatory and inpatient care setting.

- Communicate effectively using verbal, non-verbal, and written communication as it relates to various health care providers and businesses.

- Perform administrative duties based on scope of practice as it relates to finances, billing and insurance, and effective practice management.

- Apply management theory to effectively supervise the human resources of an organization.

- Solve common problems in managing the business office of a medical or medical related organization.

ACCREDITATION

The medical assistant portion of the program is accredited by the Commission on Accreditation of Allied Health Education Programs (**www.caahep.org**) upon the recommendation of the Medical Assistant Education Review Board (MAERB).

Commission on Accreditation of Allied Health Education Programs, 1361 Park St., Clearwater, FL 33756, **727-210-2350**.

ADMISSION REQUIREMENTS / ELIGIBILITY

A minimum college grade-point average of C (2.25) for both Henry Ford College and transfer students.

A COMPASS Reading score of 84 or higher or successful completion of ENG-081.

A COMPASS Pre-Algebra score of 39 or higher or successful completion MATH-074 or MATH-0771, MATH-0772, MATH-0773, AND MATH-0774 with a C grade or better.

Health Careers typing test at 45 words/min or better or successful completion of BCA-101 with a grade of B or better

The program is restricted, has a limited enrollment, and admits students based on space availability. Admission is on a first-come, first-served basis. Students must see the Health Careers advisor for admission to the program and are highly encouraged to complete their admission requirements as early as possible.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete the following:
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

Complete the following:
HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**

Complete one of the following:
ENG-132: College Writing and Research
ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

Complete the following:
MATH-101: Mathematics for Health Careers

NOTE:
For this program, General Education minimum credits: 16

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

AH-100: Medical Terminology
BBA-110: Business Language Skills
BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
BBA-153: Customer Service
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding
MOA-100: Medical Office Procedures I - Administrative
MOA-110: Processing Health Insurance Claims
MOA-120: Medical Office Computer Applications
MOA-150: Medical Office Assistant Procedures II-Clinical
MOA-170: Medical Correspondence
MOA-190: Medical Office Externship

Minimum Credit Hours: 42.0

REQUIRED SUPPORT COURSES

HCS-124: Basic Health Assessment
PSY-131: Introductory Psychology

Complete one of the following options:
BIO-134: Essentials of Anatomy and Physiology
OR
BIO-233: Anatomy and Physiology I And
BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 9.0

Minimum Number Of Credits To Graduate

67.0 (Including Options/Electives)

Additional Program Requirements

ACCREDITATION standards require that students do not receive compensation/payment, monetary or otherwise, from any clinical site for any portion of their clinical externship (MOA 190 – Medical Office Externship).

In order to begin the clinical procedures course of the MOA Program, MOA 150, students must meet the following pre-requisites:

MOA 100, MOA 110, MOA 120, and BIO 134 or BIO 233/234 all with a C grade or better

During the program the students will be required to submit proof of all of the following by designated program deadlines:

Active health insurance coverage

Completion of physical examination

Two-step tuberculosis PPD test (2-step TB test)

Evidence of required immunizations and titers.

American Heart Association, Basic Life Support for Healthcare Providers certification (AHA-BLS for Healthcare Providers card) valid beginning MOA 150 and 6 months post MOA 190 (may be satisfied by AH 105).

American Heart Association, First Aid certification valid prior to beginning MOA 150 and 6 months post MOA 190.

Valid driver's license or state issued identification card with a photo

Criminal background check and drug screen clearance

Program Duration Limits / Updates / Changes

All educational experiences are under the guidance of the MOA program. Student progress is evaluated in the classroom, laboratory, and clinical setting throughout the program. Progression in the program is based upon the student meeting the following requirements:

- Adherence to the program requirements outlined in the MOA Student Handbook.
- Achievement of a minimum grade of C or better in all MOA and required courses including the last in the sequence (MOA 190).
- Maintenance of an overall cumulative grade-point average of 2.0 or better.
- All MOA courses taken at HFC must be successfully completed within three consecutive calendar years.

HFC continuously attempts to improve each program, and as a result courses and requirements may be modified. Curriculum, course content, and admission criteria are subject to change by action of the College faculty and administration.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Medical Practice – Clinical Management

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
FUTUREDRIVEN

Occupational Exposure / Risk

Applicants who consider a career in medical assisting should be aware that during the course of their education and subsequent employment they are likely to work in situations where exposure to infectious diseases is possible. This is an occupational risk for all health care workers. Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines, however, can reduce the risk to a minimum. Thorough education in infection control procedures is an important part of the medical assistant program of study.

Latex

Early recognition of sensitization to natural rubber latex (NRL) is crucial to prevent the occurrence of life-threatening reactions in sensitized healthcare workers. The Medical Assistant Program Faculty strongly advises that students sensitized or allergic to latex consult a physician for guidance on the merits of continuing in a healthcare career. NRL sensitized students who choose to continue in their program must notify the program director upon admission.

Registry / Certification / Licensure Exam Information

Upon completion of the Medical Assistant program, students graduating from medical assistant programs accredited through Commission on ACCREDITATION of Allied Health Education Programs (CAAHEP) or ACCREDITATION Bureau of Health Education Schools (ABHES) are eligible and required to sit for either of the following certification examinations. Each credential is equal in weight, importance, and acceptance for future employment.

CMAs and RMAs receive a better salary than those without credentials. Employers prefer medical assistants from accredited programs with professional certification.

The American Association of Medical Assistant (AAMA) offers the CMA (Certified Medical Assistant) examination. The CMA is a national certification.

The American Medical Technologist (AMT) offers the RMA (Registered Medical Assistant) examination. The RMA credential is an international certification.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

According to recent reports from the U.S. Bureau of Labor Statistics, employment of medical assistants is expected to grow much faster than the average for all occupations through 2030 as the health care industry expands due to technological advances in medicine and a growing aging population.

Employment growth will be driven by the increase in the number of group practices and other health care facilities that need a high proportion of support personnel, particularly the flexible medical assistant who can handle both administrative and clinical duties.

Information about career placement and job success is available through either the Health Careers Office or the College Placement Office.

HEALTH SCIENCES

Medical Receptionist

Certificate of Achievement
Program Code: MEDREC.CA

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Elizabeth Hoffman • (313) 845-6466 • ehoffman1@hfcc.edu •
Health Careers Education Ctr • Room: G-133B

Program Information

Description

Prepares individuals to function with supervision in a health care of-fice providing customer service as well as patient intake and discharge services. The curriculum includes medical office procedures such as scheduling appointments, managing the telephone, filing, mail duties, preparing and maintaining patient records, basic insurance claims, word processing, basic, spreadsheet and database skills, as well as medical office policies such as privacy requirements.

This program may be completed in one semester or it may be used as a stepping stone for the Medical Insurance Specialist certificate followed by the Associate in Business degree in Medical Practice/Facility Business Management. The students may elect to stop out at the end of any one of the three stages depending upon their career and educational objectives.

> Medical Receptionist, Level I Certificate, 16.5 credit hours
>
> Medical Insurance Specialist, Level II Certificate, 46 credit hours
>
> Medical Practice/Facility - Business Management Associate in Business degree, 70 credit hours

Learning Outcomes

- Communicate effectively using verbal, non-verbal, and written communication as it relates to various health care providers and related businesses.
- Perform administrative front office skills within the scope of practice as it relates to an ambulatory care setting.

ADMISSION REQUIREMENTS / ELIGIBILITY

All students seeking admission into the Medical Receptionist Certificate Program must schedule an appointment with the Health Careers Advisor at **313-845-9877**.

Admission to the program is based upon satisfying the following admission requirements:

> A minimum high school grade-point-average of C+ (2.5) or a minimum average score of 55 on the GED test, or a minimum college grade-point-average of C (2.25) for both transfer students and Henry Ford College students.
>
> A COMPASS Reading score of 84 or higher or successful completion of ENG-081.
>
> A COMPASS Pre-Algebra score of 39 or higher or successful completion MATH-074 or MATH-0771, MATH-0772, MATH-0773, AND MATH-0774 with a C grade or better.
>
> Health Careers typing test at 45 words/min or better or successful completion of BCA-101 with a grade of B or better

Once these requirements have been met, the student will be given a granted petition to register for classes from the program director. Once a class roster has been filled for a particular class, the student may place themselves on the course waitlist for the next possible seat.

Medical Receptionist program course waitlists are not carried over from semester to semester. The student will be required to meet with a health careers advisor to make sure they are placed in the proper class.

Criminal Background Check and Drug Screen

Consistent with Michigan Public Health Code and the requirements of our clinical affiliates, a Criminal Background Check and a Drug Screen is required for all students in the medical assistant program prior to beginning their clinical assignments. The cost for the Health Appraisal, Drug Screen, Immunizations and background check are in addition to the cost of basic tuition and fee schedule.

Degree Specific Requirements

REQUIRED CORE COURSES

> AH-100: Medical Terminology
> AH-105: Basic Life Support for Healthcare Providers
> BBA-153: Customer Service
> HCS-103: Employment Skills for Health Careers
> HCS-131: Computers in Health Care
> MOA-100: Medical Office Procedures I - Administrative
> MOA-110: Processing Health Insurance Claims

Minimum Credit Hours: 16.5

Minimum Number Of Credits To Graduate

16.5 (Including Options/Electives)

HEALTH SCIENCES

Additional Program Requirements

The Medical Receptionist program may be completed in two semesters following a full-time schedule once the program admission requirements have been met, or the program may be extended and completed on a part-time basis. In either case, careful scheduling is required. Students are strongly encouraged to consult the Health Careers Advisor in planning their class schedules at **313-845-9877**.

Program Duration Limits / Updates / Changes

HFC continuously attempts to improve each program, and as a result courses and requirements may be modified. Curriculum, course content and admission criteria are subject to change by action of the College faculty and administration.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

The employment outlook for the Medical Receptionist is good, but very competitive especially for entry-level positions. Information about career placement is available through the College Placement Office which also assists students in finding employment.

Many health care employers are now requiring criminal background checks and drug screens of their new applicants.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

HEALTH SCIENCES

Nursing
ASSOCIATE IN APPLIED SCIENCE

Nursing

Associate in Applied Science
Program Code: NURSE.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Lorraine Paffenroth • (313) 317-6525 • lpaffen@hfcc.edu •
Welcome Center • Room: WC

Program Information

Description

Prepares individuals to work as entry-level registered nurses. HFC is the first associate's degree nursing program in Michigan and one of the first seven such programs in the nation. The program has received many awards and grants for curricula design, innovative teaching strategies, creative curriculum scheduling and collaborative partnerships. Interested parties should refer to that program for information.

Learning Outcomes

• Use evidence based practices in the delivery of nursing care.

• Communicate effectively with individuals, families, communities and the health care team using a variety of methods, including informatics.

• Utilize the nursing process and standards of care in promotion of health and wellness and in the prevention and management of illness for individuals across the life span.

• Respect the client's cultural diversity by incorporating professional nursing values of legal, ethical, and caring behaviors through lifelong learning.

• Collaborate as a member of the interdisciplinary health care team to provide quality care and integrate safety that reduces harm to clients.

• Integrate critical thinking and clinical decision making to make sound clinical judgments.

• Advocate on behalf of the client, the family and the community, who are a source of control and full partners when producing compassionate care.

ACCREDITATION

The program is approved by the Michigan State Board of Nursing and accredited by the Accreditation Commission for Education in Nursing (ACEN), (formerly the National League for Nursing accrediting Commission). Their address is 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326 Phone: **404-975-5000** and Fax: **404-975-5020 http://www.acenursing.org**

ADMISSION REQUIREMENTS / ELIGIBILITY

Admission is competitive. The program has a limited enrollment and admits students in the fall and winter semesters. To be considered, applicants must:

> Be admitted to the college and designate Associate of Science Degree with a specialization in Pre-Nursing as their program of study.

> Have a GPA of 2.7 or better.

> Submit a nursing program application with all required documentation. The application deadline is January 30th for the fall semester and June 30th for the winter semester.

> Have a High school cumulative GPA of 2.7 or better, or

> Minimum G.E.D. test score of 550 or higher, orvw

> Completion of 12 credit hours at HFC at 2.7 or higher, or

> Transfer credit of 2.7 or higher or an additional 12 credit hours at HFC to establish required GPA.

> Complete all prerequisite, non-nursing, and nursing courses with a "C" grade or better. No pre-requisite, non-nursing support or nursing course can be repeated more than one time to receive a "C" (no minus) or better grade. High school grades are only valid within 10 years of college admission date.

> Complete all Required Courses for Admissions with a "C" grade or better (no C minus grades). Required Courses for Admissions:

Biology:

> BIO 131: Introduction to Biology, or its transfer equivalent or better or a High school grade of "A" or "B" throughout a one year laboratory Advance Placement course
> BIO-233: Anatomy and Physiology I

Math:

> Complete one of the following options:
> MATH-110: Intermediate Algebra or MATH-1091, MATH-1092, MATH-1093, AND MATH-1094
> MATH-115: College Algebra
> MATH-141: Introduction to Statistics
> MATH-175: Precalculus
> MATH-180: Calculus I

Other Courses

> ENG-131: Introduction to College Writing
> HCS-131: Computers in Health Care
> PSY-131: Introductory Psychology

Successfully complete the Nursing Admission Test (NAT) objectives.

The required Nurse Admission Test (NAT) is offered by the College and must be taken at HFC.

Only two attempts are allowed.

The NAT exam must be passed within two years prior to admission dated into the Nursing Program.

The Learning Lab offers free assistance to prepare for this exam.

The NAT requirements are:

> Math proficiency at 80%.
> Reading composite proficiency at 80%.
> Grammar proficiency at 80%.
> Vocabulary proficiency at 80%.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   SOC-131: Introduction to Sociology

2. **Communication:**

   The following is required for admissions, complete with a "C" or better:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   The following is required for admissions, complete with a "C" or better:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   One of the following options are required for admissions, complete one of the following options with a "C" or better (no C minus):
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-115: College Algebra
   MATH-141: Introduction to Statistics
   MATH-175: Precalculus
   MATH-180: Calculus I

NOTE:
For this program, General Education minimum credits: 16
(10 of which is required prior to admissions to the program)

Degree-Specific Requirements

Fulfill the General Education, Required Core and Required Support Courses for this program.

REQUIRED CORE COURSES

NSG-101: Beginning Health and Physical Assessment
NSG-115: Pharmacology for Nursing Practice 1
NSG-117: Medical-Surgical Nursing 1
NSG-118: Pharmacology for Nursing Practice II
NSG-119: Medical-Surgical Nursing II
NSG-121: Psychiatric Mental Health Nursing
NSG-201: Pharmacology for Nursing Practice III
NSG-202: Medical-Surgical Nursing III
NSG-206: Pharmacology for Nursing Practice IV
NSG-207: Pediatric Nursing
NSG-208: Women's Health and Maternity Care
NSG-209: Medical-Surgical Nursing IV
NSG-212: Professional Transitions

Minimum Credit Hours: 44.0

REQUIRED SUPPORT COURSES

BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 4.0

ELECTIVE COURSES

BIO-233: Anatomy and Physiology I
ENG-131: Introduction to College Writing
HCS-131: Computers in Health Care
PSY-131: Introductory Psychology
MATH-110: Intermediate Algebra or MATH-1091, MATH-1092, MATH-1093, and MATH-1094, or MATH-115, OR MATH-141, OR MATH-175, OR MATH-180

Minimum Credit Hours: 17.0

Minimum Number Of Credits To Graduate

71.0 (Including Options/Electives)

Additional Program Requirements

Applicants must attend informational and orientation meetings scheduled by the Associate Dean of Health Sciences.

Final acceptance is contingent upon fulfilling and maintaining minimum program requirements and proof of the following by specified deadline dates:

Health Insurance
Physical examination
TB testing/screening
Immunizations as required
Titers from previous immunizations
BLS for Healthcare Professionals certification
Must pass drug screening
Criminal background check
ACE Clinical Passport Requirements Uniform/program supplies

HEALTH SCIENCES

Nursing
ASSOCIATE IN APPLIED SCIENCE

Program Duration Limits / Updates / Changes

The College and the Nursing Faculty reserve the right to make policy and program changes at any time to comply with requirements of accrediting agencies, clinical facilities, or the college, and to meet the changing health care needs of society. For the most current information, students should contact the nursing office.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Students in the nursing program must understand that they will be involved in the direct care of clients. Because nurses are required to lift, move and transfer patients, stand for long periods of time, possess certain fine motor skills and sufficient visual acuity to care for patients, additional physical capabilities are required for entrance into the program. In order to be considered for admission to or retention in the Nursing Program, students must possess:

Sufficient visual acuity necessary for accurate assessment and safe nursing care to clients, such as, physical assessment, preparation and administration of all medications and direct observation of clients.

Sufficient auditory perception to receive verbal communication from clients and members of the health team and to assess client health status while using equipment and interpreting other noise stimuli (cardiac monitors, stethoscopes, intravenous infusion pumps, dopplers, fire alarms, call lights and cries for help).

Sufficient gross/fine motor coordination to respond promptly and implement skills required in meeting health care needs of clients, including manipulation of equipment and supplies.

Sufficient physical abilities to move around client's rooms, work in treatment areas and administer cardiopulmonary procedures.

Sufficient strength to perform physical activities frequently requiring the ability to lift, push, pull objects more than fifty pounds and transfer objects and persons of more than one hundred pounds.

Sufficient communication skills (speech, reading, writing) to interact with clients and communicate their health status and needs promptly and effectively.

Sufficient intellectual and emotional capability to plan and implement care for clients.

Sufficient psychological stability essential to perform at the required levels in the clinical portions of the nursing program.

Ability to sustain long periods of concentration to make decisions regarding correct techniques, use of equipment, and proper care of clients.

Sufficient physical stamina to remain standing for long periods of time.

Applicants considering a career in nursing may also be exposed to infectious diseases during their course of study and in subsequent employment in the field and are likely to work in situations where exposure to infectious disease is possible. This is an occupational health risk for all health care workers. Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines can reduce this risk to a minimum. Thorough education in infection control procedures is an important part of the nursing program of study.

Registry / Certification / Licensure Exam Information

The nursing program prepares graduates for entry-level positions in the nursing profession.

Successful completion of the program of study qualifies graduates to receive an Associate in Applied Science Degree and apply to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN) leading to state license as a registered nurse.

Applicants should be aware that the Michigan Board of Nursing may deny a license to an applicant who has been convicted of a criminal offense or is addicted to drugs or alcoholic beverages.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Madonna University

Career Opportunities

Graduates can acquire full-time employment upon passing the National Council Licensure Exam for Registered Nurses (NCLEX-RN). Opportunities for employment in nursing exist in hospitals, clinics, home care, factories, military services, schools, public health, and education. The Bureau of Labor Statistics predicts that employment in nursing will grow 19% between the years of 2012 and 2022. Many more opportunities in nursing are available with advanced education and experience.

Nursing Care Skills

Certificate of Achievement
Program Code: NURSE.CA

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Patrice Irving • (313) 317-6534 • pirving@hfcc.edu •
School of Nursing • Room: SN138J

Program Information

Description

This five-week certificate program prepares individuals to become a Nurse Aide. Aide's render care to clients in hospitals, long-term care facilities, and in home-care. The program consists of 40 hours of course work in theory, 50 hours of laboratory activities, and 30 hours in a clinical agency. The course requires consistent attendance from 9:00 a.m. - 3:30 p.m., four days a week.

Successful mastery allows testing at the state level to receive the Certified Nurse Aide (CNA) designation. After certification, many students return to school to become nurses or other health care professionals. The CNA program is a great foundation for an Associate Degree in Applied Science.

Learning Outcomes

• Demonstrate competency in skills necessary for nurse assistants.

• Demonstrate professional behavior by communicating effectively and incorporating legal and ethical values into the care of residents.

• Provide safe, quality care to residents.

ADMISSION REQUIREMENTS / ELIGIBILITY

• High School Diploma/GED

• Score of 82 or above on the COMPASS Test, or satisfactory completion of ENG-081

• Current Basic Life Support (CPR) card from American Red Cross or American Heart Association.

• Drug screening and criminal background check.

NOTE:
Students with a history of alcohol-related driving offenses or felony convictions will find it difficult, if not impossible, to gain employment in health care. The specific process is explained in information sessions in the Nursing Skills program. Drug screening must also be paid for by the student, and this is explained during HFC's new student information session. Students who are not cleared for clinical placement through the physical examination, criminal background check, and drug screen will not be able to complete NCS-110.

Degree Specific Requirements

REQUIRED CORE COURSES

NCS-110: Competency Evaluated Nurse Assistant

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

6.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Because nurse assistants are required to lift, move, and transfer patients; stand for long period of times; possess certain fine motor skills; and sufficient visual acuity to care for patients, additional physical capabilities are required for entrance into the program. Applicants considering a career in health care may be exposed to infectious diseases during their course of study and in subsequent employment in the field, and are likely to work in situations where exposure to infectious disease is possible. Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines can reduce the risk to a minimum. Thorough education in infection control procedures is an important part of the program of study.

NOTE:
Early recognition of sensitization to natural rubber latex (NRL) is crucial to prevent the occurrence of life-threatening reactions in sensitized health care workers. Nursing faculty strongly advise that students sensitized or allergic to latex consult a physician for guidance on the merits of continuing in a health care career. NRL sensitized students who choose to continue in the nursing program must notify the program director/coordinator upon admission.

Registry / Certification / Licensure Exam Information

Upon successful completion of the course and two tests, the knowledge and clinical skills test, an applicant is issued a certification by Prometric. The certification allows the applicant to work as a CNA for a two year period.

Career Opportunities

Hospitals; Long-term care facilities; Home health care

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

HEALTH SCIENCES

Nursing - Advancement of LPNs to RNs

ASSOCIATE IN APPLIED SCIENCE

Nursing — Advancement of LPNs to RNs

Associate in Applied Science
Program Code: NURLP.AAS...

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Lorraine Paffenroth • (313) 317-6525 • lpaffen@hfcc.edu •
Welcome Center • Room: WC

Program Information

Description

Offers licensed practical nurses (LPN's) the opportunity to advance their career in nursing.   LPN's pursuing this degree who have attended an accredited LPN program and possess an active Michigan PN license are welcome to apply to the nursing program at HFCC as advanced placement students. LPN students will earn credit for prior learning for first semester courses with proof of a valid LPN license and upon successful completion of NSG 091.

Learning Outcomes

- Use evidence based practices in the delivery of nursing care.
- Communicate effectively with individuals, families, communities and the health care team using a variety of methods, including informatics.
- Utilize the nursing process and standards of care in promotion of health and wellness and in the prevention and management of illness for individuals across the life span.
- Respect the client's cultural diversity by incorporating professional nursing values of legal, ethical, and caring behaviors through lifelong learning.
- Collaborate as a member of the interdisciplinary health care team to provide quality care and integrate safety that reduces harm to clients.
- Integrate critical thinking and clinical decision making to make sound clinical judgments.
- Advocate on behalf of the client, the family and the community, who are a source of control and full partners when producing com passionate care.

ACCREDITATION

The program is approved by the Michigan State Board of Nursing and accredited by the ACCREDITATION Commission for Education in Nursing (ACEN), formerly known as the National League for Nursing Accrediting Commission. Their address is 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326 Phone **404-975-5000**; Fax **404-975-5020**; **http://www.acenursing.org**

ADMISSION REQUIREMENTS / ELIGIBILITY

Admission is competitive. The program has a limited enrollment and admits students in the fall and winter semesters. To be considered, applicants must:

Be admitted to the college and designate Associate of Science Degree with a specialization in Pre-Nursing as their program of study.

Have a GPA of 2.7 or better.

Submit a nursing program application with all required documentation. The application deadline is January 30th for the fall semester and June 30th for the winter semester.

LPN to RN students must make an appointment with the nursing admission specialist and submit a nursing program application with all required documentation by the application deadline.

Complete all Required Courses for Admissions with a "C" grade or better (no C minus grades). Required Courses for Admissions:

Biology:

BIO 131: Introduction to Biology, or its transfer equivalent or better or a High school grade of "A" or "B" throughout a one year laboratory Advance Placement course
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II

Math:

Complete one of the following options:
MATH-110: Intermediate Algebra or MATH-1091, MATH-1092, MATH-1093, AND MATH-1094
MATH-115: College Algebra
MATH-141: Introduction to Statistics
MATH-175: Precalculus
MATH-180: Calculus I

Other Courses

ENG-131: Introduction to College Writing
HCS-131: Computers in Health Care
PSY-131: Introductory Psychology

Successfully complete the Nursing Admission Test (NAT) objectives.

The required Nurse Admission Test (NAT) is offered by the College and must be taken at HFC.

Only two attempts are allowed.

The NAT exam must be passed within two years prior to admission dated into the Nursing Program.

The Learning Lab offers free assistance to prepare for this exam.

The NAT requirements are:

Math proficiency at 80%.
Reading composite proficiency at 80%.
Grammar proficiency at 80%.
Vocabulary proficiency at 80%.

Nursing - Advancement of LPNs to RNs

ASSOCIATE IN APPLIED SCIENCE

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credit hours, unless otherwise noted, from each of the five areas below.

1. **Civil Society & Culture:**

   Complete the following:
   SOC-131: Introduction to Sociology

2. **Communication:**

   The following is required for admissions, complete with a "C" or better (no C minus):
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   The following is required for admissions, complete with a "C" or better (no C minus):
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   One of the following options are required for admissions, complete one of the following options with a "C" or better (no C minus):
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-115: College Algebra
   MATH-141: Introduction to Statistics
   MATH-175: Precalculus
   MATH-180: Calculus I

NOTE:
For this program, General Education minimum credits: 16
(10 of which is required prior to admissions to the program)

Degree-Specific Requirements

Fulfill the Required Admissions and Required Core Courses for this program.

REQUIRED CORE COURSES

NSG-101: Beginning Health and Physical Assessment
NSG-115: Pharmacology for Nursing Practice 1
NSG-117: Medical-Surgical Nursing 1
NSG-091: Nursing Systems II for Articulating L.P.N. Transition Registration is granted after acceptance to program. If passed, CPCLL credit for NSG-101, NSG-115 and NSG-117 is granted
NSG-118: Pharmacology for Nursing Practice II
NSG-119: Medical-Surgical Nursing II
NSG-121: Psychiatric Mental Health Nursing
NSG-201: Pharmacology for Nursing Practice III
NSG-202: Medical-Surgical Nursing III
NSG-206: Pharmacology for Nursing Practice IV
NSG-207: Pediatric Nursing
NSG-208: Women's Health and Maternity Care
NSG-209: Medical-Surgical Nursing IV
NSG-212: Professional Transitions

Minimum Credit Hours: 45.0

REQUIRED SUPPORT COURSES

BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II
MATH-110: Intermediate Algebra or MATH-1091, MATH-1092, MATH-1093, and MATH-1094, or MATH-115, OR MATH-141, OR MATH-175, OR MATH-180
ENG-131: Introduction to College Writing
HCS-131: Computers in Health Care
PSY-131: Introductory Psychology

Minimum Credit Hours: 21.0

ELECTIVE COURSES

Minimum Number Of Credits To Graduate

72.0 (Including Options/Electives)

Nursing - Advancement of LPNs to RNs

ASSOCIATE IN APPLIED SCIENCE

Additional Program Requirements

Applicants must attend informational and orientation meetings scheduled by the Associate Dean of Health Sciences. Final acceptance is contingent upon fulfilling and maintaining minimum program requirements and proof of the following by specified deadline dates:

- An official transcript from the applicant's practical nursing school
- Proof of a current Michigan LPN license
- Verification of most recent work experience to include at least 2000 hours (equal to one year of full time employment) within the last two years as an LPN
- Submission of a resume (including job Description and daily nursing activities)
- Health Insurance
- Physical examination
- TB testing/screening
- Immunizations as required
- Titers from previous immunizations
- BLS for Healthcare Professionals certification
- Must pass drug screening
- Criminal background check
- ACE Clinical Passport Requirements
- Clinical uniform and program supplies

Specific procedures for the Advanced Placement track may be obtained from the nursing admission specialist in Advising located at the Welcome Center. Once admitted to the program, nursing administrative staff located in the School of Nursing - East Campus, in room N-120 can assist advance placement students.

Program Duration Limits / Updates / Changes

The College and the Nursing Faculty reserve the right to make policy and program changes at any time to comply with requirements of accrediting agencies, clinical facilities, or the college and to meet the changing health care needs of society. For the most current information, students should contact the nursing office.

Clinical Placements: Placement of students in clinical agencies is increasingly difficult to arrange. Clinical placements occur in many different agencies and may be during the day, afternoon, evening or weekends. Students who are unwilling or unable to make arrangements and adjustments in their personal schedules to accommodate their assigned clinical rotations will need to withdraw from the nursing program.

All educational experiences are under the direction and guidance of the nursing faculty. Student progress is evaluated in the clinical setting, classroom and nursing laboratories. Progression in nursing courses follows the policy written in the Nursing Student Handbook and is based on the student's:

> Adherence to program requirements and policies outlined in the Nursing Student Handbook.

> Achievement of the minimum grade of "C" (no C minus) for all non-nursing and required support courses.

> Achievement of the minimum grade of "C" (no C minus) for all nursing courses.

> Satisfactory clinical performance. Unsatisfactory clinical or lab performance in a course with a clinical component is considered a failure in the course.

> Competency in math dosage calculation. Failure to successfully pass a nursing course's math dosage competency exam is considered a course failure.

Withdrawal and Readmission: Students who do not complete course objectives for personal or medical reasons, receive less than a "C" grade in theory, are unable to pass math competency exams, or who receive a clinical/lab unsatisfactory evaluation for any nursing course are withdrawn from the Nursing Program. This student does not progress to the next level of courses. A cumulative GPA of 2.5 or higher is required to re-admit to the program. Refer to the Withdrawal and Readmission Policy in the Nursing Student Handbook.

Program Duration Limits: All courses for the nursing program must be completed within a total of three consecutive calendar years. BIO 233/234, or transfer course equivalents, must be successfully completed in no more than two attempts and must not be older than five years old from the date that students will enter the nursing program. Anatomy and Physiology of less than eight semester credits or taken over five years ago, must be repeated. All co-requisites must successfully completed as dictated by the nursing curricular master plan's course sequence outline.

Nursing Program Changes: The College and the Nursing faculty reserve the right to change policies at any time. The nursing program continuously updates its program of study to meet changing health needs. Requirement changes, updates and all information regarding the nursing program can be obtained through the nursing office (N120) or the Admissions Specialist for nursing (located in advising within the Welcome Center area of the College).

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Students in the nursing program must understand that they will be involved in the direct care of clients. Because nurses are required to lift, move and transfer patients, stand for long periods of time, possess certain fine motor skills and sufficient visual acuity to care for patients, additional physical capabilities are required for entrance into the program. In order to be considered for admission to or retention in the Nursing Program, students must possess:

> Sufficient visual acuity necessary for accurate assessment and safe nursing care to clients, such as, physical assessment, preparation and administration of all medications and direct observation of clients.

> Sufficient auditory perception to receive verbal communication from clients and members of the health team and to assess client

health status while using equipment and interpreting other noise stimuli (cardiac monitors, stethoscopes, intravenous infusion pumps, dopplers, fire alarms, call lights and cries for help).

Sufficient gross/fine motor coordination to respond promptly and implement skills required in meeting health care needs of clients, including manipulation of equipment and supplies.

Sufficient physical abilities to move around client's rooms, work in treatment areas and administer cardiopulmonary procedures.

Sufficient strength to perform physical activities frequently requiring the ability to lift, push, pull objects more than fifty pounds and transfer objects and persons of more than one hundred pounds.

Sufficient communication skills (speech, reading, writing) to interact with clients and communicate their health status and needs promptly and effectively.

Sufficient intellectual and emotional capability to plan and implement care for clients.

Sufficient psychological stability essential to perform at the required levels in the clinical portions of the nursing program.

Ability to sustain long periods of concentration to make decisions regarding correct techniques, use of equipment, and proper care of clients.

Sufficient physical stamina to remain standing for long periods of time.

Applicants considering a career in nursing may also be exposed to infectious diseases during their course of study and in subsequent employment in the field and are likely to work in situations where exposure to infectious disease is possible. This is an occupational health risk for all health care workers. Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines can reduce this risk to a minimum. Thorough education in infection control procedures is an important part of the nursing program of study.

Registry / Certification / Licensure Exam Information

The nursing program prepares graduates for entry-level positions in the nursing profession.

Successful completion of the program of study qualifies graduates to receive an Associate in Applied Science degree and apply to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN) which is necessary to obtain state licensure as a registered nurse.

Applicants should be aware that the Michigan Board of Nursing may deny a license to an applicant who has been convicted of a criminal offense or is addicted to drugs or alcoholic beverages.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Madonna University

Career Opportunities

Graduates may pursue full-time employment upon passing the National Council Licensure Exam for Registered Nurses. Opportunities for employment in nursing exist in hospitals, clinics, home care factories, military services, schools, public health, and education. The Bureau of Labor Statistics predicts that employment in nursing will grow 19% between the years of 2012 and 2022. Many more opportunities in nursing are available with advanced education and experience.

HEALTH SCIENCES

Ophthalmic Technician
ASSOCIATE IN APPLIED SCIENCE

Ophthalmic Technician

Associate in Applied Science
Program Code: OPTECH.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Kathy Campbell • (313) 317-1720 • kacampbell4@hfcc.edu •
Health Careers Education Ctr

Program Information

Description

Prepares individuals as entry-level Ophthalmic Technicians. The first year of the program is devoted to building a strong foundation in core technical courses and their corresponding academic support courses. Students receive a comprehensive introduction to ophthalmic technology with simulated and actual clinical equipment. During the second year, the program continues with advanced didactic conferences and studies while students begin the clinical component of the program, consisting of approximately 960 hours in a variety of diverse vision care clinical settings.

Learning Outcomes

• Perform technician-level tasks safely and accurately defined by national certification and ACCREDITATION standards.

• Communicate and collaborate effectively as part of an interdisciplinary health care team.

• Model professional and ethical behaviors in the healthcare environment.

• Performs administrative duties of an ophthalmic technician.

• Calibrate and maintain ophthalmic equipment and instrumentation.

• Evaluate eye movements and binocular functions.

• Measure visual acuity and visual fields.

• Perform surgical scrub, change gloves and gown, and monitor sterile field during minor and major eye surgery to meet professional standards.

• Perform ocular imaging procedures.

ACCREDITATION

The Ophthalmic Technician program is accredited by the Commission on ACCREDITATION of Ophthalmic Medical Programs, 2025 Woodlane Drive, St. Paul, MN 55125-2998. Phone **651-731-7244** or visit **www. jcahpo.org/coa-omp**.

ADMISSION REQUIREMENTS / ELIGIBILITY

Students who meet all admission requirements are considered qualified and are admitted to the program once per year in the fall semester on a "first-qualified, first-admitted" basis. Acceptance into the college does not constitute nor guarantee admission to the program. Final approval to enroll in the program comes from the Ophthalmic Technician Program Director. Students who are interested in this program should select Associate of Science with a specialization in Pre-Ophthalmic Technician degree, and meet with a Health Careers Advisor/Admissions Specialist in the Welcome Center.

OPT Program Admission Criteria

Minimum high school grade-point average of 2.6 (4.0 scale), or if a student has taken college courses, a minimum of 12 academic credits, excluding less than 100 level courses, HPE activity, studio and performance classes (if applicable).

COMPASS Reading score of 84 or better.

BIO-134: Essentials of Anatomy and Physiology or college equivalent with a C or better.

Complete one of the following:

MATH-100: Basic Technical Mathematics

MATH-101: Mathematics for Health Careers

MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR MATH-110: Intermediate Algebra, or higher, with a C or better.

COMPASS Writing score sufficient for placement in ENG-131. This requirement may also be fulfilled by successful completion of required developmental English courses or completion of ENG-131 with a C or better.

The Program Admission Process

It is recommended that students interested in a health career meet with a Health Careers Admissions Assistant/Advisor in the Welcome Center or **313-845-9877** to discuss program options and then create an academic plan to qualify for the selected program.

Step 1 - Apply to the program

First time applicants to HFC will indicate the program by selecting an Associate of Science with a specialization in Pre-Ophthalmic Technician degree on the application to the college.

Current HFC students must complete a program change form indicating the new program as an Associate of Science with a specialization in Pre-Ophthalmic Technician degree. College applications and change forms must be submitted to the Records and Registration Office located in the Welcome Center.

Step 2 – Qualifying for admission

Complete all program admission requirements.

Step 3 - Deliver information and track applicant status

It is the student's responsibility to make certain official transcripts are sent to: Henry Ford College, Transfer Evaluation, 5101 Evergreen Road, Dearborn, MI 48128-2407

It is the student's responsibility to make certain all necessary records are submitted to the Health Careers Admissions Assistant in the Welcome Center.

Students are responsible to monitor their program admission progress via the WebAdvisor Program Evaluation link.

Ophthalmic Technician

ASSOCIATE IN APPLIED SCIENCE

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Step 4 - Qualifying and admission

Students are qualified when all of the program's admission criteria have been satisfied.

Applicants are admitted on a "first-qualified, first-admitted" basis. Application date may be used to determine placement on the qualified list if necessary.

Students will only be contacted via the contact information provided through WebAdvisor. It is imperative that all student contact information such as phone numbers and addresses are kept current. If we are unable to contact you, we then move to the next qualified applicant.

Final approval to enroll in the program comes from the Ophthalmic Technician Program Director.

Due to the number of credit hours required for program completion and the intensity of the program, students are

encouraged to complete as many of the Required Support/General Education Courses as possible prior to entering the program.

The first courses that a student should complete are those required for program admission followed by the other Required Support/General Education Courses.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   SOC-131: Introduction to Sociology

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-101: Mathematics for Health Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

NOTE:
For this program, General Education minimum credits: 16

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

OPT-101: Introduction to Ophthalmic Technology
OPT-134: Ocular Anatomy and Pathology
OPT-150: Applied Ophthalmic Optics
OPT-160: Ocular Measurements I
OPT-180: Ocular Measurements II
OPT-200: Clinical Optical Procedures
OPT-220: Ophthalmic Photography
OPT-240: Ophthalmic Surgical Assisting
OPT-260: Current Issues in Vision Care
OPT-290: Clinical Externship I
OPT-293: Clinical Externship II
OPT-297: Clinical Externship III

Minimum Credit Hours: 45.0

All OPT courses must be successfully completed within three consecutive calendar years and may be repeated only once. A minimum of a C grade is required for all courses in this program.

REQUIRED SUPPORT COURSES

AH-100: Medical Terminology
AH-120: Pharmacology for Allied Health
BIO-135: Microbiology for the Allied Health Sciences
HCS-103: Employment Skills for Health Careers
HCS-124: Basic Health Assessment
PSY-131: Introductory Psychology

Minimum Credit Hours: 16.0

ELECTIVE COURSES

BIO-134: Essentials of Anatomy and Physiology

Minimum Credit Hours: 5.0

Minimum Number Of Credits To Graduate

82.0 (Including Options/Electives)

HEALTH SCIENCES

Ophthalmic Technician

ASSOCIATE IN APPLIED SCIENCE

Additional Program Requirements

Prior to starting the program:

Applicants must attend informational and orientation meetings scheduled by program director for Ophthalmic Technician Program.

Within two months of beginning second year clinical rotations, students must provide a current American Heart Association, Basic Life Support for Healthcare Provider card (AHA, BLS Healthcare Provider) valid through remainder of program. This may be completed by taking AH 105.

Program Supplies

Students will be required to purchase clinical uniforms and supplies including electronic devices (i.e. iPod Touch) for electronic clinical documentation. Do not purchase in advance. Specific directions will be given during orientation meeting.

Program Deposit

At the time of formal admission to the program, each applicant is required to pay a $100 fee to secure a place in the program. This fee is refunded only if the student is still active in the program Oct. 15 of Fall Term 1.

Health Appraisal

Students in the OPT program are expected to meet the same physical and mental health requirements as an ophthalmic technician.

A representative OPT Job Profile listing these requirements as well as environmental conditions of this occupation is available through the Health Careers Office.

Final acceptance and continuation in the OPT program is contingent upon fulfilling and maintaining minimum program requirements and proof of the following by specified deadline dates:

- Physical examination (must meet job profile requirements as determined by a physician and validated on health form)

- Required titers from previous immunizations and needed immunizations from titer results, if necessary. Evidence of titers must be provided by submission of current lab copies

- Tuberculosis screening

- Vaccinations as required by health care community, including flu vaccine

- Health insurance coverage throughout clinical externship portion of the program

Criminal Background Check and Drug Screen

Consistent with the Michigan Public Health Code and the requirements of our clinical affiliates, a criminal background cCheck and drug screen are required for all students in the OPT program prior to beginning clinical assignments. The cost for this test is in addition to the basic tuition and fee schedule. For questions regarding this policy, contact the Health Careers Office.

Students who are not cleared for clinical through the Health Appraisal, criminal background check, and drug screen will not be able to complete the OPT program.

Program Duration Limits / Updates / Changes

The Ophthalmic Technician (OPT) program is 23 months in length. Students must complete all OPT courses within three years of beginning the formal program. All courses in the OPT program must be completed with a C or better. Students are responsible for their own transportation to clinical sites and any expenses incurred.

The College continuously attempts to improve each program and as a result, courses and requirements may be modified. Curriculum, course content, and admission criteria are subject to change by action of the College faculty and administration. Contact the Health Careers Office at **313-845-9877** for any current program updates or visit **www. hfcc. edu**.

Withdrawal and Readmission

A students who fails one or both first semester OPT courses (OPT 101/ OPT 134) must stop out of the program. Sequencing for OPT course work is not optional; courses are scheduled annually. Therefore, all students who fail a course must appeal for continuance with a remediation plan in writing. If a student fails a course on second attempt, they are out of the ophthalmic technician program.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Applicants considering a career as an Ophthalmic Technician should be aware that during their course of study and in subsequent employment in the field, they are likely to work in situations where exposure to infectious disease is possible. This is an occupational risk for all health care workers. Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection control guidelines can reduce the risk to a minimum. Thorough education in infection control procedures is an important part of the Ophthalmic Technician program.

Latex Allergies

Early recognition of sensitization to natural rubber latex (NRL) is crucial to prevent the occurrence of life-threatening reactions in sensitized healthcare workers. The program faculty strongly advises that students sensitized or allergic to latex consult with a physician for guidance on the merits of continuing in a health care career. NRL sensitized students who choose to continue in Ophthalmic Technician program must notify the program director.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the

Ophthalmic Technician

ASSOCIATE IN APPLIED SCIENCE

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appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

The Profession Ophthalmic Technicians are health professionals who are an integral part of the team of medical practitioners providing vision care. They perform administrative and clinical functions under the direction of medical or osteopathic physicians who provide comprehensive, refractive, medical, and surgical eye care to the public. Technicians provide administrative support services by coordinating clinic schedules, charting, coding, and transmitting orders of the physician. Clinical functions may be generalized or specialized. Duties may include calibrating and maintaining ophthalmic equipment and supplies, recording medical histories and vision, testing eye movements and binocular functions, measuring optical power and visual fields, assisting in minor and major eye surgery, and performing ocular imaging and biometry services as applicable by local law.

Ophthalmic technicians are employed primarily by ophthalmologists, medical institutions, clinics, hospitals, ambulatory surgery centers, university ophthalmology centers, or physician groups in which they may be assigned to an ophthalmologist responsible for their supervision and performance. They may be involved with the patients of an ophthalmologist in any setting for which the ophthalmologist is responsible.

Demand for ophthalmic medical technicians should remain strong due to the rising population of older persons, the segment of the population with increased frequency of chronic health conditions.

HEALTH SCIENCES

Paramedic

Associate in Applied Science
Program Code: PARAMEDIC.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Shannon Bruley • (313) 317-6582 • sbruley@hfcc.edu •
Health Careers Education Ctr • Room: G-132I

Program Information

Description

Designed to meet the needs of students interested in entry-level training as well as those seeking career advancement om the emergency medical and paramedic fields. Emergency Medical Technology offers an exciting and challenging health-care career for individuals interested in providing emergency care in the pre-hospital or hospital emergency department setting.

Due to health care reform issues and the growing recognition of the Emergency Medical Technician, also known as an EMT, a professional member of the health-care team, career opportunities for EMTs of all levels of licensure are developing and expanding. Basic Emergency Medical Technicians are trained in basic life support procedures and the principles of care and transportation of the sick and injured. Basic EMT licensure qualifies the student for an entry-level position as an emergency care provider with municipal and private ambulance services as well as some hospital emergency departments. The basic EMT license is often a prerequisite for employment as a firefighter. (Progressive fire departments in our service area require a paramedic license. An EMT Basic license is the first step in meeting this criterion.)

Paramedics are highly trained members of the health-care community often responsible for bringing life-saving diagnostic and treatment skills to the patient at the scene of an emergency. Paramedics receive intense training in EKG interpretation, emergency pharmacology, and advanced life-support procedures. The scope of practice of the paramedic is rapidly expanding, creating a number of new employment opportunities.

The EMS Program at HFC offers the options of certificates of achievement in Basic EMT and Paramedic, or the option of an Associate in Applied Science degree. The HFC Paramedic Program has been awarded the highest level of approval through the Bureau of Emergency Medical Services & Trauma Systems, Michigan Department of Community Health.

Learning Outcomes

- Maintain equipment and facilities.
- Respond appropriately to calls.
- Demonstrate scene control.
- Conduct a proficient primary and secondary patient assessment.
- Identify and manage patient illness and or injury.
- Determine when to provide patient transport.
- Effectively document the incident and patient information.
- Perform post-incident management tasks.
- Perform professionally within the paramedic field.

ACCREDITATION

HFC is an approved EMS Program Sponsor through the Michigan Department of Community Health, Bureau of EMS & Trauma Systems.

ADMISSION REQUIREMENTS / ELIGIBILITY

The first year of studies for the Emergency Medical Service degree is open enrollment as long as students meet the college-level reading and writing scores identified below:

COMPASS Reading score of 82 or better.

Assessment score sufficient for placement in ENG-131. This requirement may also be fulfilled by successful completion of required developmental English courses or completion of ENG-131 or its equivalent with a C grade or better.

Students planning to enter the second year of studies, which includes the paramedic core, must apply through the EMS office in Health Careers. Required Core Course sequencing begins in the Fall semester. Early advising for course sequencing is highly recommended. Acceptance to the college is granted to most applicants and neither constitutes nor guarantees admission to the Paramedic program. Students are accepted into the program based on a "first-qualified, first-accepted" basis. All potential placements must be registered on the wait list in the EMS office.

For EMS 200-level courses, students will need to satisfy the following prerequisites:

EMT-Basic MI License (with a current National Registry Certificate preferred), BIO-233 and BIO-234,

Math proficiency as demonstrated by successful completion of MATH-080, OR MATH-0891, MATH-0892, MATH-0893, AND MATH-0894, or their equivalent, with a C grade or better OR COMPASS Algebra score of 46 or better

See first year Reading and English requirements. This applies to all students entering the second year as well.

A "C" grade or better is required for successful completion of all courses (core and support) required in the EMS program. Students not receiving a C or better cannot continue in the program until they have successfully repeated the course(s) earning a C or better. Students who do not successfully complete all co-requisite courses in the EMS Program cannot continue with that same class of students. Therefore, students who fail must repeat all coursework (200+ and up) from the beginning up to the point that they failed, and then progress in sequence with the new class of paramedic students. Students who need to repeat paramedic must request to be put on the waiting list for the following year. Re-admittance is subject to seat capacity and prior performance.

Paramedic

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

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Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete one of the following:
   CIS-100: Introduction to Information Technology
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   CHEM-131: Principles of Chemistry
   MATH-100: Basic Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

NOTE:
For this program, General Education minimum credits: 16

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

EMS-100: EMT-Basic Fundamentals
EMS-107: Basic Procedures Lab
EMS-109: EMT-Basic Clinical Externship
EMS-200: Paramedic I
EMS-206: Paramedic Procedures Lab I
EMS-210: Paramedic II
EMS-216: Paramedic Procedures Lab II
EMS-220: Paramedic III
EMS-226: Paramedic Procedures Lab III
EMS-230: Paramedic IV
EMS-240: Paramedic V
EMS-290: Advanced Clinical I
EMS-295: Advanced Clinical II
EMS-299: Advanced Clinical III

Minimum Credit Hours: 46.0

REQUIRED SUPPORT COURSES

BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 8.0

Minimum Number Of Credits To Graduate

70.0 (Including Options/Electives)

Additional Program Requirements

Health Appraisal

Each student is required to complete a Health Appraisal Form, copies of which are available in the Health Careers Office. This appraisal includes a physical, blood titers (to validate immunity to childhood immunizations), TB test, Hepatitis B and boosters if necessary. The cost for this appraisal is in addition to the basic tuition and fee schedule.

Students in the EMS program are expected to meet the same physical and mental requirements as emergency medical technicians. A representative job profile, also available in the Health Careers Office, lists the specific physical and mental requirements as well as the environmental conditions of the occupation.

Criminal Background Check and Drug Screen

Consistent with Section 20173 of the Michigan Public Health Code and the requirements of our clinical affiliates, a Criminal Background Check and Drug Screen* is required for all students in EMS programs prior to beginning clinical assignments. The cost for this test is in addition to the basic tuition and fee schedule.

Students must maintain proof of health insurance while in the program. Students must maintain a current healthcare provider CPR card from the American Heart Association while in the program.

Students with felony convictions on their record should not enroll into the program as we have a zero-tolerance stance from our clinical

HEALTH SCIENCES

affiliates. If such individual is granted an expungement, then s/he would be considered for eligibility. Students with a history of alcohol related driving offenses and or felony convictions will find it difficult if not impossible to gain employment in public safety careers.

Students who are not cleared for clinical through the Health Appraisal, Criminal Background Check, and Drug Screen will not be able to complete the EMS education programs.

Uniforms

Uniform shirts are provided through the program at the Basic EMT level. Pants, shoes, work belt, stethoscope, and National Registry exam fees are in addition to the basic tuition and fee schedule.

Job Placement

Information about career placement and job success is available through either the Health Careers Office or HFC's Career Services Office.

Program Duration Limits / Updates / Changes

Once a student is admitted/enrolled into the paramedic portion of the EMS degree, that student must complete with that same group of students. If for any reason a student must stop attending after successfully completing any portion thereof, and wishes to complete, the student must reapply through the EMS office for the desired year of return. Because of the rapid changes in health care, legislation and resulting course content, successfully completed EMS classes must be repeated in order to assure competence. This applies to all second year students who start, stop, and then return for completion. Early advising through the EMS office is essential.

The College continuously attempts to improve each program and as a result, courses and/or requirements may be modified. Curriculum, course content, and admission criteria are subject to change by action of the College faculty and administration. Contact the Health Careers Office at **313-845-9877** for any current program updates or visit HFC's website.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

In emergency medical services, both in school and on the job, exposure to infectious diseases and latex may be minimal to moderate depending on the setting in which you are working.

Exposure to illness and infectious disease is an occupational risk for all health care workers. Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines can reduce the risk to a minimum. Persons who have latex sensitivity or allergies should consult with a physician prior to entering the program for guidance on the merits of continuing in a health care career.

Registry / Certification / Licensure Exam Information

If an individual is a convicted felon, it could disqualify him/her from obtaining the necessary National Registry Certification. Visit the National Registry EMS Policy for details. After obtaining a National Registry Certificate, individuals can apply for a Michigan Licensure, which is necessary to practice EMS as a profession. If an individual is a convicted felon, questions regarding potential licensure should be directed to the Michigan Department of Community Health, Bureau of Health Professions.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Paramedics are in high demand. According to the U.S. Department of Labor, Bureau of Labor Statistics, "Employment of emergency medical technicians and paramedics is expected to grow faster than the average for all occupations through 2012" (Occupational Outlook Handbook, 2004-2005 Reprint).

Pharmacy Technician

CERTIFICATE OF ACHIEVEMENT

Pharmacy Technician

Certificate of Achievement
Program Code: PHARMTECH.CA

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Theresa Mozug • (313) 317-6548 • tmozug@hfcc.edu •
Health Careers Education Ctr • Room: G-133J

Program Information

Description

A Level II (Complex Skills Certificate) program designed to prepare professional multi-skilled individuals for employment as an entry-level pharmacy technician in hospital, retail, community or other institutional pharmacies. Clinical duties are emphasized in the classroom and laboratory with directed practical experience in selected hospital, out patient, home infusion, long-term care and compounding pharmacies.

Pharmacy technicians are skilled health specialists who, under the direction and supervision of a pharmacist, assist in the varied activities of a pharmacy department.

Students in the program will have the opportunity to practice their skills using pharmacy specific equipment and supplies. This program begins only once per year in the fall semester. Externships may be taken in the spring, summer, or fall semester. The externship rotations are arranged and supervised by the program's technical coordinator. The program is affiliated with sixteen hospital pharmacies, twelve or more out patient (retail and community) pharmacies, and several home infusion and long term care pharmacies.

Learning Outcomes

- Perform technical skills used in the pharmacy setting including preparation and dispensing medications and processing physician orders in accordance with standard procedures.
- Perform technical skills used in the pharmacy setting including preparation of IV admixtures, bulk formulations and compounding in accordance with standard procedures.
- Communicate effectively using verbal, non-verbal, and written communication in the area of customer service with clients as well as members of the health care team.

ACCREDITATION

The Pharmacy Technician Program is fully accredited through the American Society of Health-System Pharmacists (ASHSP), 7272 Wisconsin Avenue, Bethesda, Maryland 20814-4820, **301-657-3000**

ADMISSION REQUIREMENTS / ELIGIBILITY

A minimum high school academic grade point average of C+ (2.25). This requirement may also be satisfied by completion of at least 12 college credit hours with an academic grade point average of 2.25 (non-skill courses) for both transfer students and HFC students.

COMPASS Reading score of 82.

COMPASS Algebra test score of 46 or above taken within five(5) years of admission to the program OR a C grade or better taken from the following courses taken within five (5) years of admission to the program:

MATH 100: Basic Technical Mathematics

MATH 101: Mathematics for Health Careers

MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR MATH 110: Intermediate Algebra

Health Careers Typing Test of at least 25 words per minute or completion of BCA 101: Computer Keyboarding with a C or better.

Health Appraisal

Students in the Pharmacy Technician program are expected to meet the same physical and mental requirements as an employed pharmacy technician. A representative Pharmacy Technician Job Profile is available upon request from the Health Careers Office or during the interview with the program director.

The job profile lists the specific physical and mental requirements as well as the environmental conditions of the occupation. Each student must have a physical examination and vaccination record on file before admission to externship rotations. The Health Appraisal Form addresses the issue of normal color perception, eye-hand coordination, and any history of substance abuse.

Criminal Background Check and Drug Screen

Consistent with Section 20173 of the Michigan Public Health Code and the requirements of our clinical affiliates, a Criminal Background Check and Drug Screen is required for all students in the PHT program prior to beginning clinical assignments. The cost for this test is in addition to the basic tuition and fee schedule. For questions regarding this policy, contact the Health Careers Office.

Students who are not cleared for clinical through the Health Appraisal, Criminal Background Check and Drug Screen will not be able to complete the program.

Pharmacy Technician vs. Pre-Pharmacy Programs

HFC offers its students two distinct pharmacy options. One option is the is a one-year Pharmacy Technician Program. The technician curriculum is designed to prepare the students for employment assisting pharmacists after completion of the program. The courses in the Pharmacy Technician Program are designed to prepare the students for employment immediately and not designed for transfer nor intended for those students primarily interested in applying to pharmacy schools.

If a student's primary intent is on becoming a pharmacist, then the second pharmacy option at HFC which is the Associate in Science Pre-Pharmacy Program is the curriculum that should be followed. The Pre-Pharmacy Academic Transfer Program is designed for the transfer of course work for those students primarily interested in applying to pharmacy schools.

Degree Specific Requirements

REQUIRED CORE COURSES

PHT-100: Introduction to Pharmacy Technology
PHT-119: Outpatient Pharmacy Externship
PHT-124: Pharmacology I for Pharmacy Technicians
PHT-125: Pharmacology II for Pharmacy Technicians
PHT-132: Basic Pharmacy Software Applications
PHT-150: Pharmaceutical Calculations
PHT-165: Issues in Pharmacy
PHT-175: Applied Pharmacy Systems
PHT-178: Applied Out-Patient Pharmacy Systems
PHT-193: Pharmacy Externship

Minimum Credit Hours: 26.0

REQUIRED SUPPORT COURSES

AH-100: Medical Terminology
BBA-110: Business Language Skills
HCS-131: Computers in Health Care
Complete one of the following:
MATH-100: Basic Technical Mathematics
MATH-101: Mathematics for Health Careers

Minimum Credit Hours: 14.0

Required Support Courses may be taken prior to acceptance into the Pharmacy Technician program.

Minimum Number Of Credits To Graduate

40.0 (Including Options/Electives)

Additional Program Requirements

Required core courses can be taken only after formal admission to the PHT program through the Health Sciences Division.

All educational experiences are under the guidance of the PHT program. Student progress is evaluated in the classroom, laboratory and clinical setting throughout the program. Progression in the program is based upon the student meeting the following requirements:

Adherence to the program requirements outlined in the PHT Student Handbook.

Achievement of a minimum grade of C or better in all PHT and required courses.

Maintenance of an overall cumulative grade-point average of 2.0 or better.

Program Requirement

* American Heart Association, Basic Life Support for Healthcare Providers certification (AHA-BLS for Healthcare Providers card) valid for at least one year from the beginning of Winter Term 1 (January) in the program through the end of Clinical Rotation.

The Program Application Process

Step 1 – Select your career program

It is recommended that each applicant meet with a Health Careers Advisor **313-845-9877** to discuss program options and then to create an academic plan to qualify for the selected program. It is suggested that you first select and apply to your program of choice before you begin any of the prerequisite course work.

Step 2 – Apply to the program

First time applicants to HFC will indicate the pharmacy technician program code selection on the application to the College. This process automatically identifies the student's program of choice.

Current HFC students selecting to change their program of study to the pharmacy technician program must complete a Change in Program Code form. Indicate on the program code change form the new code of PHARMTECH.CA. Submit the program change form at the Welcome Center. This will alert the pharmacy technology program director that the student's intent to enter the pharmacy technician program.

Step 3 – Deliver information and track application

It is the student's responsibility to make certain that all transcripts, grades and/or necessary records are submitted to the Welcome Center.

Program applicants transferring college credit from another institution must have an official transcript mailed to:
 Henry Ford College, Transfer Evaluation, 5101 Evergreen Road, Dearborn, MI 48128-2407.

Applicants must also submit a student copy of all of their transcripts to the Health Careers Admissions assistant.

It is strongly recommended that the student personally track the requirements for admission to the program through the Health Careers Advisor located in the Welcome Center, (313) 317-6806.

Students are strongly encouraged to monitor their program admission status via the WebAdvisor Program Evaluation link.

It is imperative that all student contact information such as phone numbers and addresses is kept current through the Registration office. If we are unable to contact you, we then will move to the next qualified applicant.

Step 4 – Qualifying and admission

Students are qualified when all of the program's admission criteria have been satisfied.

Applicants are then admitted on a "first-qualified, first-accepted" basis for available positions each fall term. A student's application date to the program either by indication on HFC application or the separate Change in Program Code form then may be used to determine placement on the qualified list if necessary – the earlier the better.

Program Duration Limits / Updates / Changes

Transfer of Pharmacy Technician courses from other institutions will be accepted only from programs accredited by the American Society of Health-System Pharmacists and will be evaluated on an individual basis.

The Pharmacy Technician Program may be completed in one year (full-time) or two years (part-time). In either case, careful course sequencing is required and each student must satisfy the program's admission criteria.

There are specific admission criteria which must be satisfied in order to be admitted into this program; however, students are permitted to take the required support courses prior to being formally accepted and admitted into the program. AH-100, HCS-131, and BBA-110 may be taken prior to formal acceptance into the program.

HFC continuously attempts to improve each program, and as a result courses and requirements may be modified. Curriculum, course content and admission criteria are subject to change by action of the College faculty and administration.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Exposure to infectious diseases and latex may be minimal to moderate depending on the setting in which you are working.

Those with latex sensitivity or allergies should consult with a physician prior to entering the program for guidance on the merits of continuing in a health care career. During the course of the program students learn infection control guidelines and procedures and strict adherence to these guidelines will reduce the risk of exposure to infectious diseases.

Registry / Certification / Licensure Exam Information

Upon completion of the accredited program, students will be eligible for the Pharmacy Technician Certification Board examination (PTCB) to earn the Certified Pharmacy Technician (CPhT) credential. This program is one of six college-based programs in Michigan to maintain ACCREDITATION through ASHSP. The State of Michigan requires licensed pharmacy technicians. In order to obtain licensure in the state of Michigan the pharmacy technician must complete the PTCB certification exam and become CPhT certified. The CPhT credential is a national certification recognized by employers across the country.

Any questions regarding the national certification exam, including qualifications and eligibility, should be directed to the Pharmacy Technician Certification Board (PTCB) at **202-429-7576**.

Career Opportunities

According to recent reports from the U.S. Bureau of Labor Statistics, employment opportunities for pharmacy technicians in this region are expected to remain strong through this decade. The shortage of pharmacists and pharmacy technicians is expected to continue as the health services industry expands because of technological advances in medicine and an aging population. In addition, employment growth will be driven by the increase in the number of outpatient pharmacies, home infusion pharmacies, compounding pharmacies and other pharmacy related facilities that need skilled support personnel, particularly pharmacy technicians.

General information about career placement and job success is available through either the Health Careers Office or the College's Placement Office. In addition, salary expectations are discussed during the PHT program pre-acceptance interview.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

HEALTH SCIENCES

HENRY FORD COLLEGE
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Physical Therapist Assistant
ASSOCIATE IN APPLIED SCIENCE

Physical Therapist Assistant

Associate in Applied Science
Program Code: PTAST.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Cynthia Scheuer • (313) 317-6575 • cscheuer@hfcc.edu •
Health Careers Education Ctr • Room: G-133I

Program Information

Description

Prepares individuals for employment as entry-level Physical Therapist
Assistants. Students in this program will have learning experiences in
the classroom, laboratory and in local physical therapy facilities. The
final semester is spent in full-time (40 hrs/week) clinical externships.

Learning Outcomes

- Demonstrate competence in physical therapy intervention,from the
  plan of care established by the Physical Therapist, including review
  of the plan, provision of appropriate interventions, and progression
  as indicated.

- Demonstrate competence in data collection, based upon the plan
  of care and patient needs.

- Provide appropriate instruction to the patient, client, and/or family
  based upon the needs.

- Document accurate, consistent, legal, and relevant information
  about treatment interventions.

- Communicate effectively, orally and in writing, with the professional
  team and community for the provision of patient care and the
  betterment of the profession of physical therapy.

- Demonstrate professional behaviors throughout interactions with
  patients, fellow students, caregivers, and other practitioners.

- Utilize feedback and self-evaluation in the development of their
  own abilities and career.

- Comply with appropriate legal standards for a Physical Therapist
  Assistant.

- Exhibit conduct and integrity appropriate for the Physical Therapist
  Assistant, throughout health care related interactions, as
  established by the American Physical Therapy Association.

- Provide care as directed by the plan of care in a safe manner,
  minimizing risk to the patient, self, and others.

- Identify effective and ineffective physical therapy interventions and
  modify, within the plan of care to maximize patient outcomes.

ACCREDITATION

The Physical Therapist Assistant Program at Henry Ford College is
accredited by the Commission on ACCREDITATION in Physical Therapy
Education (CAPTE), 1111 North Fairfax Street, Alexandria Virginia
22314; telephone: 703-706-3245; email: ACCREDITATION@apta.org;
website: http://www.capteonline.org.

ADMISSION REQUIREMENTS / ELIGIBILITY

Students who meet all admission requirements are considered
qualified and are admitted to the program once per year in the fall se-
mester on a "first-qualified, first-admitted" basis. Acceptance into the
college does not constitute nor guarantee admission to the program.
Final approval to enroll in the program only comes from the Physical
Therapist Assistant Program Director. Students who are interested in
this program should select Associate of Science with a specialization
in Pre-Physical Therapist Assistant degree, and meet with a Health
Careers Advisor/Admissions Specialist in the Welcome Center.

Minimum College GPA of 2.8 (at least 12 credits excluding less than
100 level courses)

COMPASS Reading score of 84 or better

Assessment test scores sufficient to allow for placement into ENG
131*. This requirement may also be satisfied by successful completion
of the required developmental courses.

Minimum math requirement is Algebra*

May be satisfied by one of the following:

COMPASS Algebra score of 46 or better

Successful completion of MATH-080: Beginning Algebra OR MATH-
0891, MATH-0892, MATH-0893, and MATH-0894 with a C or better.

Successful completion of BIO-233: Anatomy and Physiology I, or equiv-
alent, with a B- or better, within five years of admission.*

Successful completion of AH-100: Medical Terminology, or equivalent,
with a B- or better.

Twenty hours or more of observation in a physical therapy setting
observing a PTA at work with a letter of confirmation from the super-
visory PT or PTA.

*There may be other pre-admission coursework the student needs
to complete based on results of placement tests and/or high school
coursework.

Physical Therapist Assistant

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

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The Program Admission Process

It is recommended that students interested in a health career meet with a Health Careers Admissions Assistant/Advisor in the Welcome Center or **313-845-9877** to discuss program options and then create an academic plan to qualify for the selected program.

Step 1 - Apply to the program

First time applicants to HFC will indicate the program by selecting an Associate of Science with a specialization in Pre-Physical Therapist Assistant degree on the application to the college.

Current HFC students must complete a program change form indicating the new program as an Associate of Science with a specialization in Pre-Physical Therapist Assistant degree. College applications and change forms must be submitted to the Records and Registration Office located in the Welcome Center.

Step 2 – Qualifying for admission

Complete all program admission requirements.

Step 3 - Deliver information and track applicant status

It is the student's responsibility to make certain official transcripts are sent to: Henry Ford College, Transfer Evaluation, 5101 Evergreen Road, Dearborn, MI 48128-2407

It is the student's responsibility to make certain all necessary records are submitted to the Health Careers Admissions Assistant in the Welcome Center.

Students are responsible to monitor their program admission progress via the WebAdvisor Program Evaluation link.

Step 4 - Qualifying and admission

Students are qualified when all of the program's admission criteria have been satisfied.

Applicants are admitted on a "first-qualified, first-admitted" basis. Application date may be used to determine placement on the qualified list if necessary.

Students will only be contacted via the contact information provided through WebAdvisor. It is imperative that all student contact information such as phone numbers and addresses are kept current. If we are unable to contact a student, we then move to the next qualified applicant.

Final approval to enroll in the program comes from the Physical Therapist Assistant Program Director.

Due to the number of credit hours required for program completion and the intensity of the program, students are

encouraged to complete as many of the required support/general education courses as possible prior to entering the program.

The first courses that a student should complete are those required for program admission followed by the other required support/general education courses.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

Complete at least one of the following:

MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-115: College Algebra
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III

NOTE:
For this program, General Education minimum credits: 16

Physical Therapist Assistant

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

PTA-102: Introduction to Physical Therapy Practice
PTA-110: Therapeutic Techniques for PTAs I
PTA-118: Exercise Techniques I
PTA-122: Exercise Techniques Lab
PTA-132: Kinesiology for PTAs
PTA-144: Physical Therapy Modalities
PTA-168: Development Across the Lifespan for PTAs
PTA-225: Applied Pathology for PTAs
PTA-250: Extremity Orthopedics
PTA-254: Spinal Orthopedics
PTA-262: Rehabilitation of Neurological Conditions I
PTA-265: Rehab of Neurological Conditions Lab
PTA-270: Physical Therapist Assistant Seminar
PTA-291: Clinical Externship I
PTA-295: Clinical Externship II

Minimum Credit Hours: 43.0

REQUIRED SUPPORT COURSES

BIO-234: Anatomy and Physiology II

Anatomy and Physiology courses taken five years prior or more must be repeated.

PHYS-133: Principles of Physics

Minimum Credit Hours: 8.0

ELECTIVE COURSES

AH-100: Medical Terminology
BIO-233: Anatomy and Physiology I

Minimum Credit Hours: 8.0

Minimum Number Of Credits To Graduate

75.0 (Including Options/Electives)

Additional Program Requirements

Prior to starting the program

Qualified students are invited and must attend an informational meeting scheduled by the Program Director for Physical Therapist Assistant

Health Appraisal

Potential students must have an interest in working with the ill and disabled. Good physical strength, observation skills, and communication skills are just some of the abilities required for this

job. A more detailed sample job profile is available through the Health Careers Office **313-845-9877**. Each student must pass a basic physical examination prior to entering the program and a

more detailed examination (including checking blood titers for immunity, vaccinations required by health care community, tuberculosis screening) prior to the start of clinical externships. Any students requesting special accommodations for program admission and progression should contact the Assisted Learning Office at 313-845-9617.

Criminal Background Check and Drug Screen

Consistent with Section 20173 of the Michigan Public Health Code and the requirements of our clinical affiliates, a Criminal Background Check and Drug Screen is required for all students in PTA program prior to beginning clinical assignments. The cost for this test is in addition to the basic tuition and fee schedule. For questions regarding this policy, contact the Health Careers Office.

Students who are not cleared for clinical through the Health Appraisal, criminal background check and drug screen will not be able to complete the PTA program.

Program Deposit

At the time of formal admission to the program, each applicant is required to pay a $100 fee to secure a position. One month after classes start in the fall, the $100 fee is refunded to the student if the student is still active in the program. Required core courses can be taken only after acceptance into the PTA Program through the Health Careers Division.

CPR

Students must maintain AHA-Healthcare Provider CPR-Certification throughout the Clinical Externships.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Physical Therapist Assistant

ASSOCIATE IN APPLIED SCIENCE

Occupational Exposure / Risk

In physical therapy, both in school and on the job, exposure to infectious diseases may be minimal to moderate depending on the work setting. This is an occupational risk. Proper education and strict adherence to well established infection control guidelines, can further reduce the risk. Thorough education in infection control procedures is a part of the physical therapist assistant program of study.

Latex Allergies:

Early recognition of sensitization to natural rubber latex (NRL) is crucial to prevent the possible occurrence of life-threatening reactions in sensitized healthcare workers. The program faculty strongly advise that students sensitized or allergic to latex consult a physician for guidance on the merits of continuing in a health care career. NRL sensitized students who choose to continue in the physical therapist assistant program are to notify the program director.

NOTE:

All PTA courses taken at HFC must be successfully completed within three consecutive calendar years. The HFC PTA program graduation rate is comparable to other state and national PTA programs at 78.6% in 2012, 77.8% in 2013 and 70.8% in 2014.

The College continuously attempts to improve each program and as a result, courses and/or requirements may be modified. Curriculum, course content, and admission criteria are subject to change by action of the College faculty and administration.

PTA Program Complaint and Compliment Policy:

The Henry Ford College Physical Therapist Assistant Program wishes to be responsive to any substantive complaints or compliments regarding the program, its students, faculty or graduates.

Complaints or compliments about the program students should be given in writing to the PTA Program Director, Cynthia Scheuer (**cscheuer@hfcc.edu**).

Complaints or compliments about program faculty should be given in writing to the Health Sciences Department Chair, Debra Szymanski (**dzyman@hfcc.edu**).

Complaints about PTA program graduates should be directed to the Michigan Board of Physical Therapy: LARA-Physical Therapy

Registry / Certification / Licensure Exam Information

Successful passage of the PTA Licensure Exam is required to practice in the State of Michigan. Students who are graduates of this program do qualify to sit for the National Physical Therapist Assistant Examination. Further details regarding this exam will be given as the student nears graduation. The HFC PTA program 2012-2014 ultimate pass rate on the licensing exam is 96.8%.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Siena Heights University
University of Michigan - Dearborn

Career Opportunities

The Profession

Physical Therapist Assistants (PTAs) are skilled health care providers who assist in providing planned patient care under the direction and supervision of a Physical Therapist. As members of the rehabilitation team, PTAs perform treatments designed to relieve pain, promote healing, and improve functional ability. Once a treatment plan is designed by a physical therapist, the PTA may be responsible for carrying out this treatment plan.

Opportunities

Opportunities for PTAs are excellent at this time and are projected to increase through at least the year 2018. PTAs may choose to practice in a variety of settings including hospitals, rehab centers, sports medicine clinics, public and private schools, outpatient physical therapy clinics, nursing homes, and home health settings. HFC PTA graduate employment rate over the past three years has been excellent, 95% in 2012, 95% in 2013 and 86% in 2014. Information about career placement and job success is available through either the Health Careers Office or the Career Services Office.

Pre-Nursing

Associate in Science
Program Code: PRENURSING

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Lorraine Paffenroth • (313) 317-6525 • lpaffen@hfcc.edu •
Welcome Center • Room: WC

Program Information

Description

Provides students with the general academic background to be successful in their chosen health care field. For students pursuing admission to the Nursing program, please follow these steps:

Complete the program admission requirements including NAT exam

Apply to the Nursing program

Complete the remaining Nursing program admission requirements

This degree does not have to be completed to be eligible for admission/entry to the Nursing program

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

Communication: Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

Computer Technology: Demonstrate skills for computer technology, including internet, network and advanced file operations.   Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

Quantitative Literacy: Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Culture:**
   Complete the following:
   SOC-131: Introduction to Sociology

3. **Computer Technology:**
   Complete the following:
   HCS-131: Computers in Health Care

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

4. **Critical Thinking and Information Literacy:**
   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**
   Complete the following:
   CHEM-131: Principles of Chemistry
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-141: Introduction to Statistics

NOTE:
For this program, General Education minimum credits: 27

Degree-Specific Requirements

Humanities: This category is satisfied with the General Education and Required Support Courses in this program.

Science and Mathematics: This category is satisfied with the General Education, Required Support, and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Support Courses in this program.

NOTE:
For this program, Degree-Specific Requirements have been met.

REQUIRED CORE COURSES

BIO-131: Introduction to Biology
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II
PSY-131: Introductory Psychology

Minimum Credit Hours: 15.0

REQUIRED SUPPORT COURSES

BIO-251: Microbiology
CHEM-132: Principles of Organic and Biological Chemistry
HPE-253: Nutrition for the Professional
NSG-285: Pathophysiology for Nurses

Complete two Humanities courses from two different disciplines (subjects) from the following:

Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-130: History of Graphic Design
ART-135: Art Appreciation
ART-221: Medieval Art
ART-224: Art of Islam
ART-225: Asian Art: Art of India and Southeast Asia
ART-226: African and Afro American Art
ART-227: History of Arab Art and Architecture
HUM-101: Introduction to the Humanities
HUM-250: Visual and Performing Arts for Teachers
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182: Interior Design Materials and Components
INTR-280: History of Design - Antiquities to Present
MUS-130: Music Appreciation
MUS-132: Music Literature
MUS-133: History of Rock and Roll
MUS-134: Music Fundamentals
MUS-138: Music Theory 1
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2
THEA-131: Theatre Appreciation
THEA-135: Introduction to Stage Makeup
THEA-138: Stage Costuming
THEA-238: Theatre History
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture
VTL-267: Stereoscopic Cinematography for Stage and Screen

Minimum Credit Hours: 22.0

Minimum Number Of Credits To Graduate

64.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Intended to prepared candidate for admission to HFC Nursing program or transfer to another academic institution.

Pre-Ophthalmic Technician

ASSOCIATE IN SCIENCE

Pre-Ophthalmic Technician

Associate in Science
Program Code: PREOPHTHALMICTECH

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Tara Jarois • tajarois@hfcc.edu

Program Information

Description

Provides students with the general academic background to be successful in their chosen health care field. For students pursuing admission to the Ophthalmic Technician program, please follow these steps:

Apply to the program. Students are strongly urged to meet with a health careers advisor within the first semester of course work.

Complete BIO-134: Essentials of Anatomy and Physiology or college equivalent with a C or better, and one of the following:

MATH-100: Basic Technical Mathematics

MATH-101: Mathematics for Health Careers

MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR MATH-110: Intermediate Algebra or higher level math class with a C or better.

Complete the remaining program admissions requirement in the Ophthalmic Technician program.

Confirm with health careers advisor completion of steps 1-3 and placement on the qualified/wait list.

While on the qualified/wait list complete as many of the required general education courses, as required by the program, and program support courses as possible Ophthalmic Technician program.

This degree does not have to be completed to be eligible for admission / entry to the Ophthalmic Technician program.

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

Communication: Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

Computer Technology: Demonstrate skills for computer technology, including internet, network and advanced file operations. Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

Quantitative Literacy: Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 credits total including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete the following:
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**
   Complete the following:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-101: Mathematics for Health Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

HEALTH SCIENCES

Pre-Ophthalmic Technician
ASSOCIATE IN SCIENCE

Complete one additional course from the following:
MATH-115: College Algebra
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II

NOTE:
For this program, General Education minimum credits: ....24.

Degree-Specific Requirements

Humanities: This category is satisfied with the General Education and Required Support Courses in this program.

Science and Mathematics: This category is satisfied with the General Education, Required Support, and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Support Courses in this program.

NOTE:
For this program, Degree-Specific Requirements have been met.

REQUIRED CORE COURSES

AH-100: Medical Terminology
AH-120: Pharmacology for Allied Health
BIO-134: Essentials of Anatomy and Physiology
BIO-135: Microbiology for the Allied Health Sciences
HCS-103: Employment Skills for Health Careers
HCS-124: Basic Health Assessment

Minimum Credit Hours: 18.0

REQUIRED SUPPORT COURSES

PSY-131: Introductory Psychology

Complete three additional 100-level or higher Science courses, for a minimum of nine credits (at least one non-Biology course)

Complete two Humanities courses from two different disciplines (subjects) from the following:

Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-130: History of Graphic Design
ART-135: Art Appreciation
ART-221: Medieval Art
ART-224: Art of Islam
ART-225: Asian Art: Art of India and Southeast Asia
ART-226: African and Afro American Art
ART-227: History of Arab Art and Architecture
HUM-101: Introduction to the Humanities
HUM-250: Visual and Performing Arts for Teachers
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182: Interior Design Materials and Components
INTR-280: History of Design - Antiquities to Present
MUS-130: Music Appreciation
MUS-132: Music Literature
MUS-133: History of Rock and Roll
MUS-134: Music Fundamentals
MUS-138: Music Theory 1
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2
THEA-131: Theatre Appreciation
THEA-135: Introduction to Stage Makeup
THEA-138: Stage Costuming
THEA-238: Theatre History
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture
VTL-267: Stereoscopic Cinematography for Stage and Screen

Minimum Credit Hours: 18.0

ELECTIVE COURSES

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Pre-Pharmacy
ASSOCIATE IN SCIENCE

Pre-Pharmacy

Associate in Science
Program Code: PHARM.AS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Theresa Mozug • (313) 317-6548 • tmozug@hfcc.edu •
Health Careers Education Ctr • Room: G-133J

Program Information

Description

Prepares students interested in becoming pharmacists for transfer to a 4-year institution. The courses outlined in the program of study have been carefully selected using the basic admission requirements for a number of pharmacy programs as a guide. Provides students with a solid foundation using a set of carefully selected courses, which will maximize the transfer of course work. Courses were selected to include the general admission criteria used by pharmacy schools and formal transfer agreements HFC maintains with many of the universities throughout Michigan. Pre-Pharmacy students are strongly encouraged to work closely with the Pre-Pharmacy coordinator before they select their courses.

Pharmacy Options

HFC offers our students two distinct program options. The first option is the Pre-Pharmacy Academic Transfer program, which is designed for the transfer of course work by students primarily interested in applying to pharmacy schools. The second program option at HFC is a one-year Pharmacy Technician program. The technician curriculum prepares the students for employment assisting pharmacists. Courses in the Pharmacy Technician program prepare students for employment immediately. Pharmacy technician courses do not transfer to pharmacy schools. (See the Pharmacy Technician brochure for more information on the one-year certificate program).

NOTE:
If a student's primary intent is to become a pharmacist, the Associate in Science Degree in Pre-Pharmacy is the program of study which should be followed.

Learning Outcomes

- Incorporate principles of general and organic chemistry to apply concepts.
- Differentiate between algebraic and trigonometric concepts.
- Communicate personal abilities to write effectively.
- Apply biological concepts and principals in the analysis of biological processes.
- Interpret written forms of communication.
- Demonstrate interpersonal communication skills.

ADMISSION REQUIREMENTS / ELIGIBILITY

Educational Requirements

Admission to pharmacy schools is highly competitive and very selective. Typically, pharmacy programs will use some variation of grades and admission test scores in their selection process. The specific admission criteria for schools of pharmacy vary with each individual program. There are three pharmacy programs in Michigan as well as the 17+ pharmacy programs in the general Midwest region. Because admission to pharmacy schools is so competitive, students interested in becoming a pharmacist should explore all of their options, including current admission requirements for multiple pharmacy schools.

HFC maintains close contact with many pharmacy programs in an effort to keep the program of study and course transfer agreements up-to-date. Annually, admission representatives from a number of pharmacy programs are on campus to visit and discuss their programs with HFC students.

Students need to contact, visit and frequently monitor for themselves the admission requirements for their target Pharmacy Schools as these requirements do periodically change.

NOTE:
Students should meet with the Pre-Pharmacy coordinator on a regular basis to select and sequence program of study courses.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 credits total, including at least three credit hours from each of the five areas below.

1. **Civil Society & Culture:**
   Complete the following:
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

Pre-Pharmacy
ASSOCIATE IN SCIENCE

3. **Computer Technology:**

    Complete one of the following:
    CIS-100: Introduction to Information Technology
    HCS-131:Computers in Health Care

4. **Critical Thinking & Information Literacy:**

    Complete the following:
    ENG-132: College Writing and Research

5. **Quantitative Literacy:**

    Complete the following:
    MATH-141: Introduction to Statistics
    MATH-180: Calculus 1

NOTE:
 For this program, General Education minimum credit hours: 27

Degree-Specific Requirements

Humanities: This category is satisfied with the General Education and Required Support Courses in this program.

Science and Mathematics: This category is satisfied with the General Education, Required Support, and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Support Courses in this program.

NOTE:
For this program, Degree-Specific Requirements have been met.

REQUIRED CORE COURSES

PHT-144: Pharmacy College Admission Testing (PCAT) and Current Issues in Pre-Pharmacy
BIO-152: Cells and Molecular Biology
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II
BIO-251: Microbiology
CHEM-141: Principles of General and Inorganic Chemistry I
CHEM-142: Principles of General and Inorganic Chemistry II
CHEM-241: Organic Chemistry I
CHEM-242: Organic Chemistry II
CHEM-243: Microscale Organic Chemistry Laboratory I
PHYS-131: General Physics I

Minimum Credit Hours: 43.0

REQUIRED SUPPORT COURSES

Complete one of the following:
BEC-151: Principles of Macroeconomics
BEC-152: Principles of Microeconomics

Complete two Humanities courses from two different disciplines (subjects) from the following:

Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-130: History of Graphic Design
ART-135: Art Appreciation
ART-221: Medieval Art

ART-224: Art of Islam
ART-225: Asian Art: Art of India and Southeast Asia
ART-226: African and Afro American Art
ART-227: History of Arab Art and Architecture
HUM-101: Introduction to the Humanities
HUM-250: Visual and Performing Arts for Teachers
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182: Interior Design Materials and Components
INTR-280: History of Design - Antiquities to Present
MUS-130: Music Appreciation
MUS-132: Music Literature
MUS-133: History of Rock and Roll
MUS-134: Music Fundamentals
MUS-138: Music Theory 1
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2
THEA-131: Theatre Appreciation
THEA-135: Introduction to Stage Makeup
THEA-138: Stage Costuming
THEA-238: Theatre History
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture
VTL-267: Stereoscopic Cinematography for Stage and Screen

Minimum Credit Hours: 9.0

Minimum Number Of Credits To Graduate

79.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Pre-Physical Therapist Assistant

ASSOCIATE IN SCIENCE

Pre-Physical Therapist Assistant

Associate in Science
Program Code: PREPHYSTHERAPYASST

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Tara Jarois • tajarois@hfcc.edu

Program Information

Description

Provides students with general academic background to be successful in their chosen health care field. For students pursuing admission to the Physical Therapist Assistant program, please follow these steps:

Apply to the program. Students are strongly urged to meet with a health careers advisor within the first semester of course work.

Complete the following:

BIO-233: Anatomy and Physiology I, or equivalent, with a B- or better within 5 years of admission.

AH-100: Medical Terminology, or equivalent, with a B- or better.

Complete the remaining program admission requirements in the Physical Therapist Assistant program.

Confirm with health careers advisor completion of steps 1-3 and placement on the qualified/wait list.

While on the qualified/wait list, complete as many of the required general education courses, as required by the program, and program support courses as possible.

This degree does not have to be completed to be eligible for admission / entry to the Physical Therapist Assistant program.

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

Communication: Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

Computer Technology: Demonstrate skills for computer technology, including internet, network and advanced file operations.   Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

Quantitative Literacy: Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Culture:**

   Complete the following:
   POLS-131: Introduction to American Government and Political Science

3. **Computer Technology:**

   Complete the following:
   HCS-131: Computers in Health Care

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

4. **Critical Thinking and Information Literacy:**

   Complete at least one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete at least two of the following:
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-115: College Algebra
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II

NOTE:
For this program, General Education minimum credits: 24

Pre-Physical Therapist Assistant

ASSOCIATE IN SCIENCE

Degree-Specific Requirements

Humanities: This category is satisfied with the General Education and Required Support Courses in this program.

Science and Mathematics: This category is satisfied with the General Education, Required Support, and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Support Courses in this program.

NOTE:
For this program, Degree-Specific Requirements have been met.

REQUIRED CORE COURSES

AH-100: Medical Terminology
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II
PHYS-133: Principles of Physics

Minimum Credit Hours: 16.0

REQUIRED SUPPORT COURSES

PSY-131: Introductory Psychology
Complete three additional 100-level or higher Science courses, for a minimum of nine credits

Complete two Humanities courses from two different disciplines (subjects) from the following:

Language: Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-130: History of Graphic Design
ART-135: Art Appreciation
ART-221: Medieval Art
ART-224: Art of Islam
ART-225: Asian Art: Art of India and Southeast Asia
ART-226: African and Afro American Art
ART-227: History of Arab Art and Architecture
HUM-101: Introduction to the Humanities
HUM-250: Visual and Performing Arts for Teachers
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182: Interior Design Materials and Components
INTR-280: History of Design - Antiquities to Present
MUS-130: Music Appreciation
MUS-132: Music Literature
MUS-133: History of Rock and Roll
MUS-134: Music Fundamentals
MUS-138: Music Theory 1
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2
THEA-131: Theatre Appreciation
THEA-135: Introduction to Stage Makeup
THEA-138: Stage Costuming
THEA-238: Theatre History
VTL-235: Science Fiction, Fantasy, and Horror Films

VTL-262: Introduction to Motion Capture
VTL-267: Stereoscopic Cinematography for Stage and Screen

Minimum Credit Hours: 18.0

Minimum Credit Hours: 2.0

Complete as many additional 100-level or above courses as necessary to reach the 60 credit hours required for the Associate in Science degree.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

HEALTH SCIENCES

Pre-Radiographer

ASSOCIATE IN SCIENCE

Pre-Radiographer

Associate in Science
Program Code: PRERADIOGRAPHER

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Sharon Wu • (313) 317-6595 • swu@hfcc.edu •
Health Careers Education Ctr • Room: G-133C

Program Information

Description

Provides students with the general academic background to be successful in their chosen health care field. For students pursuing admission to the Radiographer program, please follow these steps:

Apply to the program. Students are strongly urged to meet with a health careers advisor within the first semester of course work.

Complete the Required Core Courses and MATH-100: Basic Technical Mathematics, or higher with a C or better, from the General Education Courses.

Complete the remaining program admission requirements in the Radiographer program.

Confirm with Health Careers Advisor completion of steps 1-3 and placement on the qualified/wait list.

5.While on the qualified/wait list complete as many of the required general education courses, as required by the program, and program support courses as possible Radiographer program.

This degree does not have to be completed to be eligible for admission / entry to the Radiographer program.

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

Communication: Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

Computer Technology: Demonstrate skills for computer technology, including internet, network and advanced file operations.   Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

Quantitative Literacy: Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all the required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Cultures.**

   Complete the following:
   POLS-131: Introduction to American Government and Political Science

2. **Computer Technology.**

   Complete the following:
   HCS-131: Computers in Health Care

3. **Communication.**

   Complete the following:
   ENG-131: Introduction to College Writing
   SPC 131: Foundations of Speaking

4. **Critical Thinking and Information Literacy.**

   Complete at least one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   MATH-115: College Algebra
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II

HEALTH SCIENCES

Complete one additional course from the following:
MATH-100: Basic Technical Mathematics
MATH-103: Technical Mathematics
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-115: College Algebra
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Humanities: This category is satisfied with the General Education and Required Support Courses in this program.

Science and Mathematics: This category is satisfied with the General Education, Required Support, and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Support Courses in this program.

NOTE:
For this program, Degree-Specific Requirements have been met.

REQUIRED CORE COURSES

AH-100: Medical Terminology
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 12.0

REQUIRED SUPPORT COURSES

PSY-131: Introductory Psychology
Complete three additional 100-level or higher Science courses, for a minimum of nine credits (at least one non-Biology course)

Complete two Humanities courses from two different disciplines (subjects) from the following:
Language: Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-130: History of Graphic Design
ART-135: Art Appreciation
ART-221: Medieval Art
ART-224: Art of Islam
ART-225: Asian Art: Art of India and Southeast Asia
ART-226: African and Afro American Art
ART-227: History of Arab Art and Architecture
HUM-101: Introduction to the Humanities
HUM-250: Visual and Performing Arts for Teachers
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182: Interior Design Materials and Components
INTR-280: History of Design - Antiquities to Present
MUS-130: Music Appreciation

MUS-132: Music Literature
MUS-133: History of Rock and Roll
MUS-134: Music Fundamentals
MUS-138: Music Theory 1
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2
THEA-131: Theatre Appreciation
THEA-135: Introduction to Stage Makeup
THEA-138: Stage Costuming
THEA-238: Theatre History
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture
VTL-267: Stereoscopic Cinematography for Stage and Screen

Minimum Credit Hours: 18.0

ELECTIVE COURSES

Minimum Credit Hours: 6.0

Complete as many additional 100-level or above courses as necessary to reach the 60 credit hours required for the Associate in Science degree.

For assistance choosing electives, please see the health careers advisor.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

HEALTH SCIENCES

Pre-Respiratory Therapist

ASSOCIATE IN SCIENCE

Pre-Respiratory Therapist

Associate in Science
Program Code: PRERESPTHERAPY

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Tara Jarois • tajarois@hfcc.edu

Program Information

Description

Provides students with general academic background to be successful in their chosen health care field. For students pursuing admission to the Respiratory Therapist program, please follow these steps:

Apply to the program. Students are strongly urged to meet with a health careers advisor within the first semester of course work.

Complete the following:

BIO-233: Anatomy and Physiology I, or equivalent, with a C or better.

AH-100: Medical Terminology, or equivalent, with a C or better.

CHEM 131: Principles of Chemistry, with a C or better.

Complete the remaining program admission requirements in the Respiratory Therapist program.

Confirm with Health Careers Advisor completion of steps 1-3 and placement on the qualified/wait list.

While on the qualified/wait list complete as many of the required general education courses, as required by the program, and program support courses as possible.Respiratory Therapist program.

This degree does not have to be completed to be eligible for admission / entry to the Respiratory Therapist program.

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

Communication: Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

Computer Technology: Demonstrate skills for computer technology, including internet, network and advanced file operations.   Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

Quantitative Literacy: Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete the following:
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**
   Complete the following:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete the following:
   CHEM 131: Principles of Chemistry

   Complete one of the following:
   MATH-115: College Algebra
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II

NOTE:
For this program, General Education minimum credits: 24

Pre-Respiratory Therapist
ASSOCIATE IN SCIENCE

Degree-Specific Requirements

Humanities: This category is satisfied with the General Education and Required Support Courses in this program.

Science and Mathematics: This category is satisfied with the General Education, Required Support, and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Support Courses in this program.

NOTE:
For this program, Degree-Specific Requirements have been met.

REQUIRED CORE COURSES

AH-100: Medical Terminology
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 12.0

REQUIRED SUPPORT COURSES

PSY-131: Introductory Psychology
Complete three additional 100-level or higher Science courses, for a minimum of nine credits

Complete Two Humanities Courses from Two Different Disciplines (subjects) from the following

Language: Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-130: History of Graphic Design
ART-135: Art Appreciation
ART-221: Medieval Art
ART-224: Art of Islam
ART-225: Asian Art: Art of India and Southeast Asia
ART-226: African and Afro American Art
ART-227: History of Arab Art and Architecture
HUM-101: Introduction to the Humanities
HUM-250: Visual and Performing Arts for Teachers
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182: Interior Design Materials and Components
INTR-280: History of Design - Antiquities to Present
MUS-130: Music Appreciation
MUS-132: Music Literature
MUS-133: History of Rock and Roll
MUS-134: Music Fundamentals
MUS-138: Music Theory 1
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2
THEA-131: Theatre Appreciation
THEA-135: Introduction to Stage Makeup
THEA-138: Stage Costuming
THEA-238: Theatre History
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture
VTL-267: Stereoscopic Cinematography for Stage and Screen

Minimum Credit Hours: 18.0

ELECTIVE COURSES

Complete as many additional 100-level or above courses as necessary to reach the 60 credit hours required for this degree.

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Pre-Surgical Technologist

ASSOCIATE IN SCIENCE

Pre-Surgical Technologist

Associate in Science
Program Code: PRESURGTECH

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Tara Jarois • tajarois@hfcc.edu

Program Information

Description

Provides students with the general academic background to be successful in their chosen health care field. For students pursuing admission to the Surgical Technologist program, please follow these steps:

Apply to the program. Students are strongly urged to meet with a health careers advisor within the first semester of course work.

Complete BIO-135: Microbiology for the Allied Health Sciences.

Complete the remaining program admission requirements in the Surgical Technologist program.

> Confirm with Health Careers Advisor completion of steps 1-3 and placement on the qualified/wait list.

> While on the qualified/wait list complete as many of the required general education and program support courses as possible.

This degree does not have to be completed to be eligible for admission / entry to the Surgical Technologist program.

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

Communication: Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

Computer Technology: Demonstrate skills for computer technology, including internet, network and advanced file operations.   Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

Quantitative Literacy: Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete one of the following:
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**
   Complete the following:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete the following:
   MATH-100: Basic Technical Mathematics

   Complete one additional course from the following:
   MATH-115: College Algebra
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II

NOTE:
For this program, General Education minimum credits:............................24

Pre-Surgical Technologist

ASSOCIATE IN SCIENCE

HENRY FORD COLLEGE
FUTUREDRIVEN

Degree-Specific Requirements

Humanities: This category is satisfied with the General Education and Required Support Courses in this program.

Science and Mathematics: This category is satisfied with the General Education, Required Support, and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Support Courses in this program.

NOTE:
For this program, Degree-Specific Requirements have been met.

REQUIRED CORE COURSES

AH-100: Medical Terminology
AH-105: Basic Life Support for Healthcare Providers
BIO-135: Microbiology for the Allied Health Sciences or college equivalent with C or higher
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II
HCS-103: Employment Skills for Health Careers
HCS-124: Basic Health Assessment

Minimum Credit Hours: 18.5

REQUIRED SUPPORT COURSES

PSY-131: Introductory Psychology

Complete three additional 100-level or higher Science courses, for a minimum of nine credits (at least one non-Biology course)

Complete Two Humanities Courses from Two Different Disciplines (subjects) from the following

Language: Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-130: History of Graphic Design
ART-135: Art Appreciation
ART-221: Medieval Art
ART-224: Art of Islam
ART-225: Asian Art: Art of India and Southeast Asia
ART-226: African and Afro American Art
ART-227: History of Arab Art and Architecture
HUM-101: Introduction to the Humanities
HUM-250: Visual and Performing Arts for Teachers
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182: Interior Design Materials and Components
INTR-280: History of Design - Antiquities to Present
MUS-130: Music Appreciation
MUS-132: Music Literature
MUS-133: History of Rock and Roll
MUS-134: Music Fundamentals
MUS-138: Music Theory 1
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2
THEA-131: Theatre Appreciation
THEA-135: Introduction to Stage Makeup

THEA-138: Stage Costuming
THEA-238: Theatre History
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture
VTL-267: Stereoscopic Cinematography for Stage and Screen

Minimum Credit Hours: 18.0

Minimum Number Of Credits To Graduate

60.5 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

HEALTH SCIENCES

HENRY FORD COLLEGE
FUTUREDRIVEN

Radiographer
ASSOCIATE IN APPLIED SCIENCE

Radiographer

Associate in Applied Science
Program Code: RADTC.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Sharon Wu • (313) 317-6595 • swu@hfcc.edu •
Health Careers Education Ctr • Room: G-133C

Program Information

Description

Prepares students for a career in Radiologic Technology, a segment of medicine devoted to patient diagnosis through the use of ionizing radiation. Specifically, radiation is used to create images of tissues, organs, bones and vessels that comprise the human body. Clinical assignments will be held at a variety of health care settings throughout southeastern Michigan.

Learning Outcomes

- Attend to the needs of patients while in the imaging department.
- Execute medical imaging procedures of the thorax and abdomen.
- Execute medical imaging procedures of the gastrointestinal and urinary systems.
- Execute medical imaging procedures of the spine and pelvis.
- Execute medical imaging procedures of the head.
- Execute medical imaging procedures of upper and lower extremities.
- Utilize radiographic and fluoroscopic equipment, fixed and mobile, to produce diagnostic images.
- Comply with the legal and ethical radiation protection responsibilities of radiation workers.
- Apply the prime technical factors to produce quality radiographic images within an acceptable exposure indicator range.
- Integrate decision making skills into clinical practice.
- Communicate effectively within the health care setting.
- Model professional behavior within the health care setting.

ACCREDITATION

The Joint Review Committee on Education in Radiologic Technology, JRCERT, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182, **(312) 704-5300**, FAX: **(423) 304-5304**, **mail@jrcert.org**, accredits the program, **www.jrcert.org**.

JRCERT Program Effectiveness Data:

1. First time pass rate on ARRT National credentialing exam: Class of 2014, 95% (18/19); five year average from 2010 – 2014, 97% (120/124)

2. Graduation Rate: Class of 2014, 74% (20/27); five year average 2010 - 2014, 87% (125/143)

3. Job Placement Rate (# of graduates employed within 12 months versus # actively seeking employment): Class of 2014, 78% (14/18), five year average from 2010 – 2014, 81% (91/113)

Admission Requirements / Eligibility

Students who meet all admission requirements are considered qualified and are admitted to the program once per year in the fall semester on a "first-qualified, first-admitted" basis. Acceptance into the college does not constitute nor guarantee admission to the program. Final approval to enroll in the program comes from the Radiographer Program Director. Students who are interested in this program should select Associate of Science with a specialization in Pre-Radiographer degree, and meet with a Health Careers Advisor/Admissions Specialist in the Welcome Center.

Program Admission Requirements

GPA of 2.5: High school GPA of 2.5 (on a 4.0 scale) or a college GPA of at least 2.5 for the last 12 academic credits. (**NOTE:** Once a college GPA has been established, high school GPA is no longer considered.)

COMPASS Reading score of 84 or better.

COMPASS Writing Test score sufficient for placement in ENG 131. This requirement may also be fulfilled by successful completion of required developmental English courses.

MATH-100: Basic Technical Mathematics or higher with a C grade or better.

BIO-233: Anatomy and Physiology I, with a C grade or better.

AH-100: Medical Terminology, with a C grade or better.

Basic occupational experience:

    May be fulfilled with one of the following:

    MOA-160: Basic X-ray Techniques, with a C grade or better. It is highly recommended that students take this course.

    Twenty (20) hours of observation in a radiography department at a hospital or clinic with a letter of support from a supervisor.

The Program Admission Process

It is recommended that students interested in a health career meet with a Health Careers Admissions Assistant/Advisor in the Welcome Center or **313-845-9877** to discuss program options and then create an academic plan to qualify for the selected program.

Step 1 - Apply to the program

First time applicants to HFC will indicate the program by selecting an Associate of Science with a specialization in Pre-Radiography degree on the application to the College.

Current HFC students must complete a program change form indicating the new program as an Associate of Science with a specialization in Pre-Radiographer degree. College applications and change forms must be submitted to the Records and Registration Office located in the Welcome Center.

Radiographer

ASSOCIATE IN APPLIED SCIENCE

Step 2 – Qualifying for admission

Complete all program admission requirements.

Step 3 - Deliver information and track applicant status

It is the student's responsibility to make certain official transcripts are sent to: Henry Ford College, Transfer Evaluation, 5101 Evergreen Road, Dearborn, MI 48128-2407

It is the student's responsibility to make certain all necessary records are submitted to the Health Careers Admissions Assistant in the Welcome Center.

Students are responsible to monitor their program admission progress via the WebAdvisor Program Evaluation link.

Step 4 - Qualifying and admission

Students are qualified when all of the program's admission criteria have been satisfied.

Applicants are admitted on a "first-qualified, first-admitted" basis. Application date may be used to determine placement on the qualified list if necessary.

Students will only be contacted via the contact information provided through WebAdvisor. It is imperative that all student contact information such as phone numbers and addresses are kept current. If we are unable to contact you, we then move to the next qualified applicant.

Final approval to enroll in the program comes from the Radiographer Program Director.

Due to the number of credit hours required for program completion and the intensity of the program, students are encouraged to complete as many of the Required Support/General Education Courses as possible prior to entering the program. The first courses that a student should complete are those required for program admission followed by the other Required Support/General Education Courses.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Satisfied by this program's admissions requirements:
   MATH-100: Basic Technical Mathematics or higher with a C grade or better.

NOTE:
For this program, General Education minimum credits: 16

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

RAD-101: Introduction to Radiography
RAD-109: Clinical Education I
RAD-111: Principles of Radiation Protection
RAD-114: Basic Patient Care in Radiography
RAD-118: Radiographic Positioning
RAD-158: Radiographic Positioning II
RAD-161: Imaging Equipment
RAD-171: Principles of Exposure
RAD-181: Contrast Studies
RAD-190: Clinical Education II
RAD-195: Basic Clinical Education
RAD-209: Intermediate Clinical Education
RAD-214: Pathology and Cross Sectional Anatomy *
RAD-228: Radiographic Procedures
RAD-267: Radiation Physics *
RAD-270: Image Acquisition and Display
RAD-274: Principles of Radiation Biology
RAD-284: Principles of Computed Tomography **
RAD-286: Registry Review
RAD-290: Advanced Clinical Education
RAD-296: Capstone Clinical Education

Minimum Credit Hours: 49.0

REQUIRED SUPPORT COURSES

> BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 4.0

ELECTIVE COURSES

> AH-100: Medical Terminology
> BIO-233: Anatomy and Physiology I
> MATH-100: Basic Technical Mathematics Also meets the Quantitative Literacy General Education Requirement

Minimum Credit Hours: 8.0

Minimum Number Of Credits To Graduate

77.0 (Including Options/Electives)

Additional Program Requirements

Prior to starting the program

CPR certification American Heart Association, Basic Life Support, Health Care Provider. Fulfilled by taking AH 105-Basic Life Support.

Students must attend two Radiographer (RAD) program Spring meetings prior to acceptance into the RAD program.

Required for digital clinical documentation

iPhone or iPod touch

Details regarding iPhone or iPod touch will be provided at the Radiographer Program Spring meeting.

Health Appraisal Form

Each Radiographer student must submit an acceptable Health Appraisal Form. Copies of the form are available through the Health Careers Office.

Criminal Background Check and Drug Screen

Consistent with Section 20173 of the Michigan Public Health Code the requirements of clinical rotation partners, a Criminal Background Check and Drug Screen clearances will be required to participate in any clinical rotations.

Program Deposit

At the time of formal admission to the program, each applicant is required to pay a $100 fee to secure a position. One month after classes start in the fall, the $100 fee is refunded to the student if the student is still active in the program.

Program Duration Limits / Updates / Changes

HFC continuously attempts to improve each program, and as a result courses and requirements may be modified. Curriculum, course content, and admission criteria are subject to change by action of the College faculty and administration.

Graduation

Graduates of the Radiographer program will be awarded an Associate in Applied Science Degree. Graduates who intend to take the American Registry of Radiologic Technologists (ARRT) certification examination are required to meet all general and ethical qualifications of the ARRT.

A list of qualifications is available upon request at ARRT **(651) 687-004**8 or at **www.arrt.org**.

Health Care Coverage

It is the student's responsibility to have health care coverage in place during the entire program. Hospitalization insurance can be purchased through the College.

Clinical Assignments

Required for digital clinical documentation: iPhone or iPod touch.

Radiology students begin a continuous twenty-two month clinical rotation during the first semester of the program. Clinical time is generally 8 a.m.- 4:30 p.m. with specific days of assignment changing from semester to semester. Beginning in the third semester of training, students are assigned clinical rotations on the afternoon shift.

Listed below is a tentative breakdown of assigned clinical days for each semester.

First Semester: Fall

* Monday/Wednesday/Friday

Second Semester: Winter

* Monday/Wednesday/Friday

Third Semester: Spring

* Tuesday/Wednesday/Thursday

Fourth Semester: Fall

* Tuesday/Thursday/Friday

Fifth Semester: Winter

* Tuesday/Thursday/Friday

Sixth Semester: Spring

* Monday/Tuesday/Thursday

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

HEALTH SCIENCES

Radiographer

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

FUTUREDRIVEN

Occupational Exposure / Risk

In Radiologic Technology, both in school and on the job, frequent exposure to radiation, sharps, patient secretions, bodily wastes, infectious patients, electricity, equipment noise, and latex is possible. These are occupational risks. Proper education in all areas and strict adherence to well established infection control guidelines can reduce the risk to a minimum. Thorough education in all areas, including infection control procedures, is an important part of the radiographer program.

Latex allergy Early recognition of sensitization to natural rubber latex (NRL) is crucial to prevent the possible occurrence of life-threatening reactions in sensitized healthcare workers. The program faculty strongly advise that students sensitized or allergic to latex consult a physician for guidance on the merits of continuing in a health care career. NRL sensitized students who choose to continue in the radiographer program are to notify the program director.

Registry / Certification / Licensure Exam Information

Students who intend to take the American Registry of Radiologic Technology Certification Examination are required to meet all general and ethical qualifications of the ARRT. A list of qualifications is included in the student handbook. Conviction of a crime may prevent a student from taking this examination. This material is also available upon request by calling the ARRT at (651) 687-0048 or online at www.arrt.org.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> Central Michigan University

Career Opportunities

Mission

• The Mission of the HFC Radiographer Program is to graduate competent, entry-level radiologic technologists.

• HFC is dedicated to the education and enrichment of our students and community. The HFC Radiographer Program shares this value.

Goal 1. Graduates will be clinically competent

Learning Outcomes

Graduates will apply a common core of knowledge in:

> Patient Care;
>
> Radiographic Positioning;
>
> Equipment Operation;
>
> Radiation Protection;
>
> Image Production.

Goal 2. Graduates will think critically.

> Learning Outcome
>
> Graduates will integrate decision making skills into clinical practice.

Goal 3. Graduates will communicate effectively.

> Learning Outcome
>
> Graduates will communicate effectively.

Goal 4. Graduates will adopt the personal and professional behaviors of an entry-level radiologic technologist.

> Learning Outcome
>
> Graduates will assume responsibility and respond positively to guidance.

Goal 5. Graduates will be employable and certified in sufficient number to meet the needs of the community.

The Profession

Radiologic Technology is a segment of medicine devoted to patient diagnosis through the use of ionizing radiation. Specifically, radiation is used to create images of tissues, organs, bones, and vessels that comprise the human body. When requested by a physician, it is the radiographer who is responsible for creating these images in a safe and precise manner. The radiologist, a physician who is specifically trained in the interpretation of these images, performs diagnosis of the final image.

A major responsibility of the radiographer lies in the proper use of radiation. When not properly utilized, ionizing radiation has the potential to be damaging to both patient and user. Therefore, the radiographer is trained to understand radiation and be aware of its potential hazards. This knowledge serves to protect the patient and the radiographer, creating a safe work environment

Opportunities

The job market for radiographers in southeastern Michigan is becoming increasingly more competitive. Information regarding employment trends for radiographers in Michigan is available through the HFC Placement Office (313) 845-9618.

A representative job profile for radiographer can be obtained through the Health Careers Office. Students requiring accommodation should directly contact the Assisted Learning Services at **313-845-9617**.

HEALTH SCIENCES

Respiratory Therapist

ASSOCIATE IN APPLIED SCIENCE

Respiratory Therapist

Associate in Applied Science
Program Code: RESTH.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Debra Szymanski • (313) 317-6580 • dszyman@hfcc.edu •
Health Careers Education Ctr • Room: G-133F

Program Information

Description

Prepares individuals for employment as entry-level Respiratory Therapists. Graduates of the program are awarded an Associate in Applied Science Degree and are eligible to apply for the National Board of Respiratory Care (NBRC) examination(s) leading to the national credential designation of Registered Respiratory Therapist (RRT) and state licensure as a Respiratory Therapist. The program provides a blend of classroom, laboratory, and clinical experiences. The first year of the program involves completion of technical and support courses. Beginning with the spring semester and throughout the second year of the program, students are required to complete advanced technical courses and a wide variety of clinical rotations. Core courses are offered during the day and only in the semester as indicated in the course sequence. Support courses are usually offered in a variety of semesters and times.

Learning Outcomes

- Evaluate a patient's current condition and response to therapy using physical exam, laboratory data, and other clinical information.
- Develop a treatment plan specific to the needs of the patient.
- Recommend additional procedures and therapy to treat the patient, and modifications to treatment plan.
- Administer oxygen therapy according to standard protocol.
- Administer aerosolized medication therapy according to standard protocol.
- Administer bronchial hygiene and lung volume expansion therapy according to standard protocol.
- Recommend initiation, modifications, and liberation from life support.
- Administer mechanical ventilation and life support according to standard protocol.
- Educate patients and family members concerning disease processes and self-care, and the public on preventative medicine.

Accreditation

The Respiratory Therapist program is accredited by the Commission on Accreditation for Respiratory Care (CoARC). Student/Graduate outcomes for respiratory therapy programs can be found on the CoARC website at: **http://www.coarc.com/47.html**.

Commission on Accreditation for Respiratory Care (CoARC)
1248 Harwood Road, Bedford, Texas 76021-4244**817-283-2835, www.coarc.com**

Admission Requirements / Eligibility

Students who meet all admission requirements are considered qualified and are admitted once a year in the fall semester on a "first-qualified, first admitted" basis. Acceptance into the college does not constitute nor guarantee admission to the program. Final approval to enroll in the program comes from the Respiratory Therapist Program Director. Students interested in this program are to select the program Associate in Science with a specialization in Pre-Respiratory Therapist degree and meet with the Health Careers Advisor/Admissions Specialist in the Welcome Center.

Minimum College GPA of 2.7 (4.0 scale) - (at least 12 credit hours excluding lower than 100 level courses).

COMPASS Reading score of 84 or better.

COMPASS Writing score sufficient for placement in ENG 131. This requirement may also be fulfilled by successful completion of required developmental English courses or completion of ENG 131 with a C grade or better.

Minimum math requirement is Algebra*

May be satisfied by one of the following:

COMPASS Algebra score of 46 or better.

MATH-0891, MATH-0892, MATH-0893, and MATH-0894, OR MATH-080: Beginning Algebra, with a C or better

BIO-233: Anatomy and Physiology I, with a C grade or better.

AH-100: Medical Terminology, with a C grade or better.

CHEM-131: Principles of Chemistry, with a C grade or better.

Individuals new to the field of Respiratory Therapy may find it helpful to job shadow a Respiratory Therapist. This will give new students the ability to see first-hand the wide variety of responsibilities that are part of the profession. Contact your local Respiratory Care department to arrange for this opportunity.

** The Program Admission Process **

It is recommended that students interested in a health career meet with the Health Careers Admissions Assistant/Advisor in the Welcome Center or (313)845-9877 to discuss program options and then create an academic plan to qualify for the selected program.

Step 1 - Apply to the program

First time applicants to HFC will indicate the program by selecting an Associate of Science with a specialization in Pre-Respiratory Therapist degree on the application to the college.

Respiratory Therapist

ASSOCIATE IN APPLIED SCIENCE

Current HFC students must complete a program change form indicating the new program as an Associate of Science with a specialization in Pre-Respiratory Therapist degree. College applications and change forms must be submitted to the Records and Registration Office located in the Welcome Center.

Step 2 – Qualifying for admission

Complete all program admission requirements.

Step 3 - Deliver information and track applicant status

It is the student's responsibility to make certain official transcripts are sent to: Henry Ford College, Transfer Evaluation, 5101 Evergreen Road, Dearborn, MI 48128-2407

It is the student's responsibility to make certain all necessary records are submitted to the Admission Assistant of Health Careers in the Welcome Center.

Students are responsible to monitor their program admission progress via the WebAdvisor Program Evaluation link.

Step 4 - Qualifying and admission

Students are qualified when all of the program's admission criteria have been satisfied.

Applicants are admitted on a "first-qualified, first-admitted" basis. Application date may be used to determine placement on the qualified list if necessary.

Students will only be contacted via the contact information provided through WebAdvisor. It is imperative that all student contact information such as phone numbers and addresses are kept current. If we are unable to contact a student, we then will move to the next qualified applicant.

Final approval to enroll in the program only comes from the Respiratory Therapist Program Director.

NOTE: Due to the number of credit hours required for program completion and the intensity of the program students are encouraged to complete as many of the Support and General Education classes as possible prior to entering the program. The first courses that a student should complete are those required for program admission followed by the required Support and General Education courses.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete the following:
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete the following:
   CHEM-131: Principles of Chemistry

NOTE:
For this program, General Education minimum credits: 16

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

RTH-100: Principles of Respiratory Care
RTH-125: Respiratory Care Procedures I
RTH-160: Respiratory Therapy Pharmacology
RTH-175: Respiratory Care Procedures II
RTH-180: RT Clinical Sciences
RTH-195: Introduction to Clinical Therapeutics
RTH-210: Ventilator Management I
RTH-220: Respiratory Care in Neonates and Pediatrics
RTH-240: Cardiopulmonary Diagnostics
RTH-250: Advanced Mechanical Ventilation
RTH-270: Therapeutic Clinical Management
RTH-285: Advanced Respiratory Concepts
RTH-293: Advanced Clinical Therapy
RTH-292: Clinical Practicum
RTH-294: Advanced Clinical Practicum

Minimum Credit Hours: 51.5

Respiratory Therapist

ASSOCIATE IN APPLIED SCIENCE

REQUIRED SUPPORT COURSES

BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 4.0

ELECTIVE COURSES

AH-100: Medical Terminology
BIO-233: Anatomy and Physiology I
CHEM-131: Principles of Chemistry Meets the Quantitative Literacy General Education Requirement

Minimum Credit Hours: 8.0

Minimum Number Of Credits To Graduate

79.5 (Including Options/Electives)

Additional Program Requirements

Prior to starting the Program

Applicants are invited and must attend informational and orientation meetings scheduled by the Program Director for Respiratory Therapy.

CPR--AHA Basic Life Support Healthcare Provider

American Heart Association: Evidence of CPR completed within two months of beginning the RT program by providing current AHA, BLS Healthcare Provider card.

Program Supplies

Students must purchase clinical uniforms and supplies including stethoscopes and electronic devices (i.e. iPod Touch) for electronic clinical documentation. Do NOT purchase in advance. Specific directions will be given during orientation meeting.

Program Deposit

At the time of formal admission to the program, each applicant must pay a $100 fee to secure a place in the program. This fee is refunded only if the student is still active in the program Oct. 15 of Fall Term 1. Required core courses can be taken only after acceptance into the RTH program through the Health Careers Office.

Health Appraisal

Students in the RTH program are expected to meet the same physical and mental health requirements as a respiratory therapist. A representative RTH Job Profile listing these requirements, as well as environmental conditions of this occupation, is available through the Health Careers Office.

Final acceptance and continuation in the RTH program is contingent upon fulfilling and maintaining minimum program requirements and proof of the following by specified deadline dates:

Physical examination (must meet job profile requirements as determined by a physician and validated on health form)

Required titers from previous immunizations and needed immunizations from titer results, if necessary. Evidence of titers must be provided by submission of current lab copies

Tuberculosis screening

Vaccinations as required by health care community

Health Insurance coverage throughout program

Criminal Background Check and Drug Screen

Consistent with Section 20173 of the Michigan Public Health Code and the requirements of our clinical affiliates, a Criminal Background Check and Drug Screen are required for all students in the RTH program prior to beginning clinical assignments.

Students who are not cleared for clinical through the Health Appraisal, Criminal Background Check, and Drug Screen will not be able to complete the RTH program.

Other Requirements

All RTH courses taken at HFC must be successfully completed with a "C" or better. Students are responsible for their own transportation to clinical sites and any expenses incurred.

Program Duration Limits / Updates / Changes

Program is twenty-one months in length. Students must complete all RTH courses within three years of beginning the formal program. Each Respiratory Therapist course may be repeated only once.

The College continuously attempts to improve each program and as a result, courses and/or requirements may be modified. Curriculum, course content, and admission criteria are subject to change by action of the College faculty and administration. Contact the Health Careers Office for any current program updates or visit **www.hfcc.edu** for any current updates.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Applicants considering a career in Respiratory Therapy should be aware that during their course of study and in subsequent employment in the field, they are likely to work in situations where exposure to infectious disease is possible. This is an occupational risk for all health care workers.

Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines, can reduce the risk to a minimum. Thorough education in infection control procedures is an important part of the respiratory therapist program of study.

Latex Allergies

Early recognition of sensitization to natural rubber latex (NRL) is crucial to prevent the occurrence of life-threatening reactions in sensitized healthcare workers. The program faculty strongly advises that students sensitized or allergic to latex consult a physician for guidance on the merits of continuing in a health care career. NRL sensitized students who choose to continue in the Respiratory Therapist program must notify the program director.

Respiratory Therapist

ASSOCIATE IN APPLIED SCIENCE

Registry / Certification / Licensure Exam Information

Successful completion of the program of study qualifies graduates to receive an Associate of Applied Science degree, become eligible to sit for the national ACCREDITATION exams for the designation of the Registered Respiratory Therapist (RRT) and apply for statelicensure as a respiratory therapist. The national examinations consist of the Therapist Multiple-Choice Examination (TCM) and the Clinical Simulation Examination offered by the National Board of Respiratory Care (NBRC). Information on the exam process is available through the NBRC at **www.nbrc.org**.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> Siena Heights University
> University of Michigan - Dearborn

Career Opportunities

The Profession

> Respiratory therapists are health care professionals, dedicated to providing life-supporting, life-enhancing care to newborns, children, adults and the elderly. Respiratory therapists work under

qualified medical direction to assess, treat, manage, provide diagnostic evaluation, educate, and care for patients with deficiencies and abnormalities associated with the cardiopulmonary system.

Therapists work throughout hospitals, most often in intensive care units and emergency settings.

Therapists are a special blend of patient-centered caregivers and technically sharp, analytical hinkers. Some therapists concentrate on pulmonary rehabilitation and continuing care in patient homes or extended care facilities while others specialize in pediatric/neonatal care. The respiratory herapist may also work in areas such as cardiopulmonary diagnostics, medical equipment sales, management, and education.

Opportunities

The outlook for RTs has never been better. According to the Bureau of Labor Statistics, employment is expected to increase faster than average through the year 2022. The American Association for Respiratory Care (AARC) offers a wide variety of information on a career in Respiratory Therapy at **www.aarc.org**.

HEALTH SCIENCES

Surgical Technologist

ASSOCIATE IN APPLIED SCIENCE

Surgical Technologist

Associate in Applied Science
Program Code: SURTC.AAS

Contact

Health Sciences Division • (313) 845-9877 •
Health Careers Education Ctr • Room: G-132

Keambra Pierson • (313) 317-6598 • kdpierson@hfcc.edu •
Health Careers Education Ctr • Room: G-133K

Program Information

Description

Prepares individuals for employment as entry-level surgical technologists. In the first year of the program, students complete the basic technical and academic support courses. The second year focuses on advanced technical courses and the clinical component of the program. There are two major clinical courses in the second year of the program. Students spend approximately 600 hours in a variety of diverse, quality clinical settings. Core courses in the program are offered only in the semester as indicated in the course sequence. This program meets the standard program guidelines for clinical case requirements.

Learning Outcomes

- Select the items needed to open a sterile field for an operative procedure.
- Create the sterile field including gowning staff, setting up sterile equipment, instruments, and supplies, and draping the surgical patient.
- Maintain the sterile field throughout the surgical procedure.
- Demonstrate handling of surgical instruments and sharps during the surgical procedure.
- Demonstrate intraoperative handling of sterile medications used on the OR field.
- Demonstrate accurate and appropriate surgical counts.
- Communicate and collaborate with OR team members to deliver effective and efficient intraoperative care to the surgical patient.
- Model professional behavior within the health care setting.

Accreditation

The Surgical Technology Program is accredited through the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting 3**03-694-9262**. CAAHEP can be reached at **www.caahep.org**.

Admission Requirements / Eligibility

Students who meet all admission requirements are considered qualified and are admitted to the program once per year in the fall semester on a "first qualified, first admitted" basis. Acceptance into the college does not constitute nor guarantee admission to the program. Final approval to enroll in the program comes from the Surgical Technology Program Director. Students who are interested in this program should select Associate of Science with a specialization in Pre-Surgical Technology degree, and meet with a Health Careers Advisor/Admissions Specialist in the Welcome Center.

Minimum high school grade-point average of 2.5 (4.0 scale), or if student has taken college courses, a minimum of 12 academic credits, excluding less than 100-level courses, HPE activity, studio and performance classes (if applicable)

COMPASS Reading score 84 or better

BIO-135: Microbiology for Allied Health Sciences or college equivalent with C or higher

COMPASS Writing score sufficient for placement in ENG-131. This requirement may also be fulfilled by successful completion of required developmental English courses.

The Program Admission Process

It is recommended that students interested in a health career meet with a Health Careers Admissions Assistant/Advisor in the Welcome Center or **313-845-9877** to discuss program options, and then create an academic plan to qualify for the selected program.

Step 1 - Apply to the program

First time applicants to HFC will indicate the program by selecting an Associate of Science with a specialization in Pre-Surgical Technology degree on the application to the college.

Current HFC students must complete a program change form indicating the new program as an Associate of Science with a specialization in Pre-Surgical Technology degree. College applications and program change forms must be submitted to the Records and Registration Office located in the Welcome Center.

Step 2 – Qualifying for admission

Complete all program admission requirements.

Step 3 - Deliver information and track applicant status

It is the student's responsibility to make certain official transcripts are sent to: Henry Ford College, Transfer Evaluation, 5101 Evergreen Road, Dearborn, MI 48128-2407

It is the student's responsibility to make certain all necessary records are submitted to the Health Careers Admissions Assistant in the Welcome Center.

Students are responsible to monitor their program admission progress via the WebAdvisor Program Evaluation link.

Step 4 - Qualifying and admission

Students are qualified when all of the program's admission criteria have been satisfied.

Surgical Technologist

ASSOCIATE IN APPLIED SCIENCE

Applicants are admitted on a "first-qualified, first-admitted" basis. Application date may be used to determine placement on the qualified list if necessary.

Students will only be contacted via the contact information provided through WebAdvisor. It is imperative that all student contact information such as phone numbers and addresses are kept current. If the College is unable to contact a student, then the College will move onto the next qualified applicant.

Final approval to enroll in the program comes from the Surgical Technology Program Director.

Students are encouraged to complete as many of the Required Support/General Education courses as possible prior to entering the program. The first courses that a student should complete are those required for program admission followed by the other Required Support/General Education courses.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete one of the following:
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   HCS-131: Computers in Health Care

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete the following:
   MATH-100: Basic Technical Mathematics

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

SRG-101: Introduction to Surgical Technology
SRG-120: Surgical Procedures I
SRG-140: Surgical Techniques I
SRG-150: Surgical Techniques II
SRG-160: Surgical Pharmacology
SRG-209: Surgical Externship I
SRG-220: Surgical Procedures II
SRG-240: Issues in Surgical Technology
SRG-290: Clinical Externship II

Minimum Credit Hours: 36.0

REQUIRED SUPPORT COURSES

BIO-135: Microbiology for the Allied Health Sciences This course is an admission requirement for this program. Students must earn a C grade or better.

AH-100: Medical Terminology
AH-105: Basic Life Support for Healthcare Providers
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II
HCS-103: Employment Skills for Health Careers
HCS-124: Basic Health Assessment

Minimum Credit Hours: 18.5

Minimum Number Of Credits To Graduate

70.5 (Including Options/Electives)

Additional Program Requirements

Prior to staring the program

Qualified students are invited and must attend an informational meeting scheduled by the Program Director for Surgical Technology.

Program Deposit

At the time of formal admission to the program, each applicant is required to pay a $100 fee to secure a place in the program. This fee is refunded only if the student is still active in the program in late October of Fall Term I. Required core courses can be taken only after acceptance into the SRG Program through the Health Careers Division.

Surgical Technologist
ASSOCIATE IN APPLIED SCIENCE

Health Appraisal

Students in the SRG program must meet the same physical and mental health requirements as a surgical technologist. A representative SRG job profile listing these requirements, as well as environmental conditions of this occupation, is available through the Health Careers Office. Students requiring accommodation should directly contact the HFC Assisted Learning Services.

Final acceptance and continuation in the SRG program is contingent upon fulfilling and maintaining minimum program requirements and proof of the following by specified deadline dates:

> Physical examination (must meet job profile requirements as determined by a physician and validated on health form)

> Required titers from previous immunizations and needed immunizations from titer results, if necessary. Evidence of titers must be provided by submission of current lab copies

> Tuberculosis screening

> Vaccinations as required by health care community

> Current AHA, BLS Healthcare Provider card as evidence of CPR completion. Valid through two years of the program

> Health insurance coverage for the clinical aspects of the program

> Drug screening and criminal background check

Criminal Background Check and Drug Screen

Consistent with Section 20173 of the Michigan Public Health Code and the requirements of our clinical affiliates, a criminal background check and drug screen are required for all students in the SRG program prior to beginning clinical assignments. The cost for test is in addition to the basic tuition and fee schedule. For questions regarding this policy, contact the Health Careers Office.

NOTE:
Students who are not cleared for clinical through the Health Appraisal, criminal background check, and drug screen will not be able to complete the program.

Other Requirements

A minimum grade of C is required in all courses for successful completion of the program.

Students are responsible for their own transportation to clinical sites and any expenses incurred.

Program Duration Limits / Updates / Changes

Program is twenty-one months in length. Students must complete all SRG courses within three years of beginning the formal program.

The College continuously attempts to improve each program and as a result, courses and/or requirements may be modified. Curriculum, course content, and admission criteria are subject to change by action of the College faculty and administration. Contact the Health Careers Office at **313-845-9877** for any current program updates or visit **www.hfcc.edu**.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Applicants considering a career in Surgical Technology should be aware that during their course of study and in subsequent employment in the field, they are likely to work in situations where exposure to infectious disease is possible. This is an occupational risk for all health care workers.

Persons should not become health care workers unless they recognize and accept this risk. Proper education and strict adherence to well established infection-control guidelines can reduce the risk to a minimum. Thorough education in infection control procedures is an important part of the Surgical Technology program of study.

Latex Allergies

Early recognition of sensitization to natural rubber latex (NRL) is crucial to prevent the occurrence of life-threatening reactions in sensitized healthcare workers. The program faculty strongly advises that students sensitized or allergic to latex consult a physician for guidance on the merits of continuing in a health care career. NRL sensitized students who choose to continue in the Surgical Technology program must notify the program director

Registry / Certification / Licensure Exam Information

Graduates of the program are eligible to sit for the National Certification exam offered by the National Board of Surgical Technology and Surgical Assisting for the designation of Certified Surgical Technologist (CST). The HFC Surgical Technologist program graduate CST exam results have been excellent, 94% in 2014 and 100% in 2015.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

HEALTH SCIENCES

Surgical Technologist

ASSOCIATE IN APPLIED SCIENCE

Career Opportunities

Surgical technologists are allied health professionals who are an integral part of the team of medical practitioners providing surgical care to patients in a variety of settings. The surgical technologist works under medical supervision to facilitate the safe and effective conduct of invasive surgical procedures. This individual works under the supervision of a surgeon to ensure that the operating room environment is safe, that equipment functions properly, and that the operative procedure is conducted under conditions that maximize patient safety.

A surgical technologist possesses expertise in the theory and application of sterile and aseptic technique and combines the knowledge of human anatomy, surgical procedures and implementation tools, and technologies to facilitate a physician's performance of invasive herapeutic and diagnostic procedures. Surgical technologists work in operating and delivery rooms, emergency room facilities, and the ambulatory care areas of hospitals and other medical institutions. They may also work in clinics and physicians' offices. Many surgical technologists are employed directly by surgeons and specialize in fields such as orthopedics, etc. A representative job profile for a surgical technologist can be obtained through the Health Careers Office.

Helpful qualities for surgical technologists include:

a strong sense of responsibility
an ability to work well with others
emotional stability
an ability to respond quickly
an ability to be orderly and work quickly
an ability to work well under stress

Opportunities

Demand for surgical technologists should remain strong due to the rising population of older persons, the segment of the population with the greater frequency of health care needs. Information regarding career placement and job success is available through either the Health Careers Office or the HFC Career Services Office.

HEALTH SCIENCES

Advanced Machine Tool Technology/CNC Certificate

CERTIFICATE OF ACHIEVEMENT

Advanced Machine Tool Technology / CNC Certificate

Certificate of Achievement
Program Code: CNCAD.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Guy Pizzino • (313) 845-6331 • gpizzino@hfcc.edu • Technology Bldg • Room: E-117B

Program Information

Description

Provides students with the opportunity to improve and build on current skills and knowledge of CNC. Students receive training on the latest equipment used in the modern business environment, and successful students have the opportunity to develop an advanced-level of proficiency in the use and application of CNC equipment.

Learning Outcomes

- Develop knowledge of career opportunities and demonstrate the requisite entry level machining and measurement skills for the Manufacturing Industry.
- Practice safe work habits in an industrial manufacturing environment.
- Create a basic or complex part on non-computerized industry standard machining and turning equipment.
- Create complete complex parts on computer controlled machining centers.
- Create complete complex parts on computer controlled turning centers.
- Utilize quality control concepts to identify root cause part discrepancies.
- Synthesize information using numerical control software to complete three-dimensional parts on computer controlled milling and turning centers.

Degree Specific Requirements

REQUIRED CORE COURSES

MTT-100: Machine Tool Processes I
MTT-130: Quality Control Gaging and Inspection
MTT-140: Introduction to CNC
MTT-145: CNC Operations
MTT-146: Introduction to Machine Tool Probing
MTT-147: Basic Macro Programming for CNC
MTT-148: Advanced CNC Probing
MTT-150: Statistical Process Control (SPC) In Manufacturing
MTT-275: Advanced CNC Operations

Minimum Credit Hours: 24.0

Minimum Number Of Credits To Graduate

24.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

The courses required for this certificate are all accepted towards an associate degree to improve a student's employability. The certificate can be used as a building block toward an Associate's Degree in Science.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Advanced Pathways

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE

FUTUREDRIVEN

Advanced Pathways

Certificate of Achievement
Program Code: ADPATH.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Joseph Skupin • jskupin@hfcc.edu • Technology Bldg • Room: E-172

Program Information

Description

Covers the foundational skills necessary to pass employer-delivered selection tests and helps prepare students for employment in the skilled trades.

Learning Outcomes

- Demonstrate an understanding of the mathematical functions specific to their trade.

- Demonstrate an understanding of the occupational health and safety requirements relative to the workplace in general and specific to their trades.

- Demonstrate an understanding of basic industrial computer applications in the general workplace and specific to their trades.

- Demonstrate an understanding of the application of graphic design relative to the general workplace and specific to their trades.

- Demonstrate an understanding of job skills specific to their trades.

- Demonstrate an understanding of the following essential knowledge and skills: troubleshooting, measurement, communication, use of hand tools, use of personal protection equipment, graphic interpretation, and problem solving.

ADMISSION REQUIREMENTS / ELIGIBILITY

Satisfactory COMPASS scores in reading and math are required for entry into this program.

Degree Specific Requirements

REQUIRED CORE COURSES

TADV-060: Basic Skills for the Skilled Trades
TADV-100: Basic Print Reading
TAFD-117: Industrial Computer Applications
TAFD-120: Industrial Safety Awareness
TAFD-150: Applied Technology
TAMA-110: Industrial Applications of Basic Mathematical Principles
TAMA-120: Industrial Applications of Algebraic Principles

Minimum Credit Hours: 19.0

Minimum Number Of Credits To Graduate

19.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Architecture/Construction Technology

ASSOCIATE IN APPLIED SCIENCE

Architecture/Construction Technology

Associate in Applied Science
Program Code: ARCON.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Chad Richert • (313) 317-1515 • crichert@hfcc.edu • Technology Bldg • Room: E-115C

Program Information

Description

Teaches architectural CAD/drafting and building construction methods and materials including both residential and commercial building types. Laboratory classes provide students with experience in the areas of residential and commercial construction materials, computer-aided drafting and design, cost estimating, construction methods, presentation techniques, residential construction practices and use of surveying equipment. Covers the principles and necessary skills of the architectural profession supported by an understanding of building construction through hands-on activities designed to provide students with a practical skill-based education.

Learning Outcomes

- Demonstrate employable skills (attendance, written communication, verbal communication, teamwork) in the fields of architecture and/or construction.

- Demonstrate the professional practice of architecture and construction.

- Prepare a series of commercial construction documents utilizing current industry software and accepted architectural standards and techniques.

- Prepare a series of residential construction documents utilizing current industry software and accepted architectural standards and techniques.

- Develop a series of design presentation drawings utilizing traditional and computerized techniques.

- Select the appropriate construction materials and systems in residential and commercial projects.

- Demonstrate knowledge of sustainable materials and energy efficient systems in residential and commercial projects.

- Apply basic construction methods and procedures as they relate to a residential construction project.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Business degrees require at least 15 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete at least one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete at least one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete at least one of the following:
   MATH-103: Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-115: College Algebra
   MATH-180: Calculus I

NOTE:
For this program, General Education minimum credits: 16

Architecture/Construction Technology

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
FUTUREDRIVEN

Degree-Specific Requirements

Fulfill the Required Core and/or Elective Courses for this program.

REQUIRED CORE COURSES

ACT-116: Basic Architectural CAD
ACT-124: Construction Systems 1
ACT-128: Visual Communications 1
ACT-136: Intermediate Architectural CAD
ACT-150: Residential Detailing
ACT-175: Environmental Building Systems
ACT-211: Commercial Construction Systems
ACT-222: Sustainable Residential Design
ACT-224: Construction Systems 2
ACT-233: Commercial Detailing
ACT-246: Construction Estimating
ACT-260: Commercial Design Development
Complete one of the following:
ACT-101: Fundamentals of Architecture
ENGR-103: Civil Engineering and Architecture (CEA)

Minimum Credit Hours: 48.0

ELECTIVE COURSES

Must complete at least one of the following:
ACT-104: Community Construction Applications
ACT-109: Residential Energy Efficiency and Sustainability
ACT-190: Co-op in Architecture Construction Technology
ACT-205: Advanced Architectural CAD
ACT-228: Visual Communications 2
ACT-290: Co-op in Architecture Construction Technology

Minimum Credit Hours: 1.0

Minimum Number Of Credits To Graduate

65.0 (Including Options/Electives)

Additional Program Requirements

Students are required to take a co-op class for at least one semester. This experience has proven to be invaluable as students "try on" the career they've chosen and earn while they learn. Pay rates generally are compatible with entry-level positions (Average 2008 rate =approx $11.44/hour) and a high percentage of students are asked to continue their employment after their initial co-op semester.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Ferris State University
Lawrence Technological University
University of Detroit Mercy
University of Michigan - Ann Arbor

Career Opportunities

Appraiser
Architectural CAD Technician
Architectural Illustrator
Building and Construction Technician
Building Code Inspector
Building Materials Sales Rep
Builder
Construction Estimator
Civil Engineer Tech
Facilities Management Technician
Materials Testing Lab Technician
Structural Steel Detailer

INDUSTRIAL TECHNOLOGY

Automotive Service (ASSET)

ASSOCIATE IN APPLIED SCIENCE

Automotive Service (ASSET)

Associate in Applied Science
Program Code: ASSET.AAS

Contact

Industrial Technology Division • (313) 845-9656 •
technology@hfcc.edu • Technology Bldg • Room: E-172

Kristopher Young • (313) 845-6324 • ksyoung@hfcc.edu •
Technology Bldg • Room: E-162C

Program Information

Description

Prepares individuals for service and repair positions in automobile
dealerships and independent garages. Courses provide successful
students with the job competencies and skills required for entry-level
employment. In addition to completing core, support, and General
Education credits, students are required to participate in cooperative
education at local automobile repair facilities.

Learning Outcomes

- Demonstrate knowledge of the career opportunities in the
  automotive service industry.

- Develop the requisite entry-level skills and knowledge for
  employment in the automotive service industry.

- Demonstrate the utilization of safety hazards standards/
  precautions as associated with the automotive service industry,
  and develop and demonstrate the necessary skills to work safely
  in auto labs and service shop environments.

- Demonstrate the characteristics and standards of professionalism
  that contribute to an effective job performance in a manner that
  include behavior, appearance and punctuality.

- Demonstrate effective communication skills both in the written and
  verbal forms to communicate difficult and technical information to
  others, including fellow students, instructors and/or customers.

- Apply the learned theories of automotive technology to specific
  situations to reach conclusion resulting in the proper diagnosis and
  repair through the use of interpreted data, and previous
  experiences, and to identify root causes.

- Demonstrate the utilization of technology reflective to the task to
  effectively retrieve information to solve complex problems through
  critical analysis to ensuring adequate preparations for the
  advancements that take place in the automotive service industry.

ACCREDITATION

The Automotive Service (ASSET) program is fully certified by the
National Institute for Automotive Service Excellence (ASE), the Nation-
al Automotive Technicians Education Foundation (NATEF) Board and
is fully accredited in all Ford Motor Company STST credentialing areas.
NATEF, 101 Blue Seal Drive, S.E., Suite 101, Leesburg, VA 20175. Phone:
703-669-6650, **www.natef.org**.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet
Degree-Specific Requirements AND General Education Requirements.
Courses listed in the Required Core and/or Required Support Courses
may also be used to fulfill Degree-Specific and General Education
Requirements. Developmental courses (those numbered below 100)
cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire
program form before making course selections for registration pur-
poses. The College recommends that students meet with an advisor or
counselor well in advance of registration deadlines and before making
course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's
General Education Outcomes for this program. Students who change
their program will need to confirm in advance that they are complet-
ing all required courses for their specific program of study, including
additional General Education courses. All Associate in Applied Science
degrees require at least 15 credits total including at least three credit
hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete the following:
   POLS-131: Introduction to American Government and Political
   Science

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete the following:
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete the following:
   AUTO-135: Mathematics for the Technician

INDUSTRIAL TECHNOLOGY

Automotive Service (ASSET)

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
FUTUREDRIVEN

Degree-Specific Requirements

Fulfill the Required Core Courses for this program.

REQUIRED CORE COURSES

AUTO-102: Related Technical Automotive
AUTO-105: Internal Combustion Engines
AUTO-108: Basic Automotive Electricity
AUTO-110: Automotive Electrical Systems
AUTO-120: Automotive Fuel Management Systems
AUTO-131: Automotive Ignition Systems
AUTO-132: Computer Ignition Systems
AUTO-140: Automotive Transmissions Systems
AUTO-142: Electronically Controlled Transmission/Transaxles
AUTO-145: Manual Transmissions and Transaxles
AUTO-150: Automotive Diagnosis and Engine Evaluation
AUTO-160: Automotive Chassis Units
AUTO-162: Antilock Brake Systems
AUTO-165: Electronic Steering and Suspension
AUTO-191: Automotive Service Co-op
AUTO-192: Automotive Service Co-op
AUTO-224: Automotive Air Conditioning
AUTO-231: Diesel Engine Performance and Diagnosis
AUTO-237: Computerized Engine/Vehicle Emission Control
AUTO-291: Automotive Service Co-op
AUTO-292: Automotive Service Co-op

Minimum Credit Hours: 54.0

Minimum Number Of Credits To Graduate

69.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn

Career Opportunities

• Service Technician
• Service Manager

Automotive Service Management — Technical Concentration

Associate in Applied Science
Program Code: AUTOSERVMGMT.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

David Tillman • (313) 845-6424 • dstillman@hfcc.edu • Technology Bldg • Room: E-162M

Program Information

Description

Emphasizes automotive service technical skills and business management courses. Covers how to develop the skills and knowledge necessary for success in automotive service management, including the use of effective communication with customers, co-workers, and service technicians.

Learning Outcomes

- Develop the requisite skills and knowledge for entry-level employment in the automotive service industry.
- Utilize standard industry safety protocols in service labs, dealerships, private repair facilities, and other related areas.
- Demonstrate the characteristics and standards of professionalism that contribute to an effective job performance in a manner that include behavior, appearance, and punctuality.
- Demonstrate effective written and verbal communication skills when communicating highly technical information.
- Apply management theory to effectively supervise the human resources of an organization.
- Evaluate management decisions given an organization's relationship to the external business environment.
- Creatively solve common problems in managing an organization.
- Employ appropriate computer applications when performing business activities.

ACCREDITATION

The Automotive Technology program is certified by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF) Board.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete at least one of the following:
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete the following course:
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete at least one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-175: Precalculus
   CHEM-131: Principles of Chemistry

NOTE:
For this program, General Education minimum credits: 18

INDUSTRIAL TECHNOLOGY

Automotive Service Management – Technical Concentration

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
FUTURE DRIVEN

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

AUTO-101: Automotive Fundamentals
AUTO-105: Internal Combustion Engines
AUTO-110: Automotive Electrical Systems
AUTO-120: Automotive Fuel Management Systems
AUTO-131: Automotive Ignition Systems
AUTO-140: Automotive Transmissions Systems
AUTO-150: Automotive Diagnosis and Engine Evaluation
AUTO-160: Automotive Chassis Units
AUTO-225: Automotive Air Conditioning
AUTO-230: Automotive Diesel Principles
AUTO-260: Alternative Automotive Propulsion Systems
AUTO-190: Co-op in Automotive Technology

Minimum Credit Hours: 26.0

REQUIRED SUPPORT COURSES

Complete one of the following:
BAC-110: Practical Accounting
BAC-131: Introduction to Financial Accounting

Complete all of the following:
BBA-131: Introduction to Business
BBA-133: Business Behavior and Communication
BBA-153: Customer Service
BMA-110: Business Math
MGT-230: Principles of Management
MGT-231: Supervision and Teambuilding
BCO-190: Co-op in Business

Minimum Credit Hours: 24.0

Minimum Number Of Credits To Graduate

68.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn

Career Opportunities

Service managers of automotive dealerships
Managers of aftermarket automotive repair and parts chain stores
Assistant service manager
Service advisor
Service writer
Service consultant
• Diagnostic technician
• Dynamometer technician
• Parts manager
• Product test technician
• Service manager
• Service technician

INDUSTRIAL TECHNOLOGY

Automotive Technology

CERTIFICATE OF ACHIEVEMENT

Automotive Technology

Certificate of Achievement
Program Code: AUTOT.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

David Tillman • (313) 845-6424 • dstillman@hfcc.edu • Technology Bldg • Room: E-162M

Program Information

Description

Covers the various systems found on today's vehicles, including electrical, fuel, ignition, power, and drive train. Course work provides a broad background in numerous fields allied to the automobile industry and provides actual experience to strengthen understanding of the theory learned in the classroom. Laboratory classrooms are equipped with some of the latest equipment, including representative types of engines, chassis, transmissions, rear axles, and considerable testing equipment. This program can be completed individually or applied to the Associate degree in Automotive Technology. Because this certificate transfers into a two-year degree program, it is highly recommended that students complete certificate requirements prior to degree requirements.

Learning Outcomes

• Demonstrate proper use of special tools.

• Use safety equipment properly.

• Dissemble, perform critical measurements, resemble, and demonstrate satisfactory operation of components.

• Perform job specific tasks as required for NATEF accreditation.

• Demonstrate proper use of tools and equipment commonly found in industry.

• Research proper service information using common current industry technology.

• Demonstrate proper care and use of emerging technology tools and equipment.

• Demonstrate proper care and use of alternative energy tools and equipment.

• Demonstrate proficiency and understanding of emerging technologies.

Accreditation

The Automotive Technology program is certified by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF).

Degree Specific Requirements

REQUIRED CORE COURSES

AUTO-101: Automotive Fundamentals
AUTO-105: Internal Combustion Engines
AUTO-110: Automotive Electrical Systems
AUTO-120: Automotive Fuel Management Systems
AUTO-131: Automotive Ignition Systems
AUTO-140: Automotive Transmissions Systems
AUTO-142: Electronically Controlled Transmission/Transaxles
AUTO-150: Automotive Diagnosis and Engine Evaluation
AUTO-160: Automotive Chassis Units
AUTO-167: Brake Clinic
AUTO-181: Technical Automotive Welding
AUTO-187: Automotive Engine Tune-up
AUTO-215: Automotive Engine Dynamometer
AUTO-217: Automotive Alignment Clinic
AUTO-225: Automotive Air Conditioning
AUTO-227: Automotive Air Conditioning Clinic
AUTO-230: Automotive Diesel Principles
AUTO-237: Computerized Engine/Vehicle Emission Control
AUTO-287: Advanced Automotive Tune-up

Minimum Number Of Credits To Graduate

44.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Davenport University
Eastern Michigan University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn
Wayne State University

Career Opportunities

• Dynamometer Technician
• Parts Manager
• Product Test Technician
• Service Manager
• Service Technician

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Automotive Technology

ASSOCIATE IN APPLIED SCIENCE

Automotive Technology

Associate in Applied Science
Program Code: AUTOT.AAS

Contact

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technology@hfcc.edu • Technology Bldg • Room: E-172

David Tillman • (313) 845-6424 • dstillman@hfcc.edu •
Technology Bldg • Room: E-162M

Program Information

Description

Offers an in-depth study of the multiple systems found on today's vehicles, including electrical, fuel, ignition, power, and drive train. Provides a thorough exposure to the technical aspects of the automobile, and to develop manual and critical thinking skills related to diagnostics, servicing, and testing. Courses provide a broad technical background for individuals interested in automotive technology and related industries.

Laboratory classes offer hands-on experience designed to strengthen understanding of the theoretical concerns outlined during lecture periods. Laboratories possess many of the latest equipment currently used to service today's automobiles, including representative types of various engines, chassis, transmissions, rear axles, and testing equipment.

Learning Outcomes

• Develop knowledge of the career opportunities in the automotive service industry.

• Develop the requisite entry-level skills and knowledge for employment in the automotive service industry.

• Demonstrate the utilization of safety hazards standards/precautions as associated with the automotive service industry and develop and demonstrate the necessary skills to work safely in auto labs and service shop environments.

• Demonstrate the characteristics and standards of professionalism that contribute to an effective job performance in a manner that include behavior, appearance, and punctuality.

• Demonstrate effective communication skills both in the written and verbal forms to communicate difficult and technical information to others, including fellow students, instructors, and/or customers.

• Apply the learned theories of automotive technology to specific situations to reach conclusion resulting in the proper diagnosis and repair through the use of interpreted data, previous experiences and to identify root causes.

• Demonstrate the utilization of technology reflective to the task to effectively retrieve information to solve complex problems through critical analysis to ensuring adequate preparations for the advancements that take place in the automotive technology industry.

ACCREDITATION

The Automotive Technology program is certified by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF) Board.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credits from each of the five areas below. For this program:

1. **Civil Society and Culture:**

   Complete at least one of the following:
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science

2. **Computer Technology Outcome:**

   Complete the following:
   CIS-100: Introduction to Information Technology

3. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

4. **Critical Thinking and Information Literacy:**

   Complete the following:
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete at least one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-175: Precalculus
   CHEM 131: Principles of Chemistry

INDUSTRIAL TECHNOLOGY

Automotive Technology

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

AUTO-101: Automotive Fundamentals
AUTO-105: Internal Combustion Engines
AUTO-110: Automotive Electrical Systems
AUTO-120: Automotive Fuel Management Systems
AUTO-131: Automotive Ignition Systems
AUTO-140: Automotive Transmissions Systems
AUTO-150: Automotive Diagnosis and Engine Evaluation
AUTO-160: Automotive Chassis Units
AUTO-215: Automotive Engine Dynamometer
AUTO-225: Automotive Air Conditioning
AUTO-230: Automotive Diesel Principles
AUTO-260: Alternative Automotive Propulsion Systems

Complete one of the following courses:
AUTO-293: Automotive Technology-Service Experience Laboratory I
AUTO-294: Automotive Technology-Service Experience Laboratory II

Minimum Credit Hours: 34.0

REQUIRED SUPPORT COURSES

Complete 14 credit hours from the following courses:
AUTO-142: Electronically Controlled Transmission/Transaxles
AUTO-145: Manual Transmissions and Transaxles
AUTO-162: Antilock Brake Systems
AUTO-165: Electronic Steering and Suspension
AUTO-167: Brake Clinic
AUTO-181: Technical Automotive Welding
AUTO-187: Automotive Engine Tune-up
AUTO-190: Co-op in Automotive Technology
AUTO-217: Automotive Alignment Clinic
AUTO-227: Automotive Air Conditioning Clinic
AUTO-231: Diesel Engine Performance and Diagnosis
AUTO-237: Computerized Engine/Vehicle Emission Control
AUTO-247: Automotive Emission Controls
AUTO-267: Small Engines
AUTO-287: Advanced Automotive Tune-up
AUTO-290: Co-op in Automotive Technology

Minimum Credit Hours: 14.0

Minimum Number Of Credits To Graduate

63.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Eastern Michigan University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn
Wayne State University

Career Opportunities

- Diagnostic Technician
- Dynamometer Technician
- Parts Manager
- Product Test Technician
- Service Manager
- Service Technician

Automotive Technology –
Auto Air Conditioning, Brakes, Alignment

HENRY FORD COLLEGE
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CERTIFICATE OF ACHIEVEMENT

Automotive Technology — Auto Air Conditioning, Brakes, Alignment

Certificate of Achievement
Program Code: AUTOACBRAL.CA

Contact

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David Tillman • (313) 845-6424 • dstillman@hfcc.edu • Technology Bldg • Room: E-162M

Program Information

Description

These courses can be applied to the Associate in Applied Science degree in Automotive Technology.

Learning Outcomes

- Demonstrate proper use of special tools.

- Use safety equipment properly.

- Dissemble, perform critical measurements, resemble, and demonstrate satisfactory operation of components.

- Perform job specific tasks as required for NATEF accreditation.

- Demonstrate proper use of tools and equipment commonly found in industry.

- Research proper service information using common current industry technology.

- Demonstrate proper care and use of emerging technology tools and equipment.

- Demonstrate proper care and use of alternative energy tools and equipment.

- Demonstrate proficiency and understanding of emerging technologies.

ACCREDITATION

The Automotive Technology program is certified by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF) Board.

Degree Specific Requirements

REQUIRED CORE COURSES

AUTO-167: Brake Clinic
AUTO-217: Automotive Alignment Clinic
AUTO-227: Automotive Air Conditioning Clinic

Minimum Number Of Credits To Graduate

6.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Automotive Technology — Dynamometer Technician

Certificate of Achievement
Program Code: DYNATECH.CA

Contact

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David Tillman • (313) 845-6424 • dstillman@hfcc.edu • Technology Bldg • Room: E-162M

Program Information

Description

Provides the necessary knowledge and laboratory experience to achieve entry-level job skills in those courses relating directly to the set-up, operation, and data acquisition system commonly employed in automotive chassis and engine dynamometers. Because the course work for the Certificate of Achievement transfers into the two-year degree program, it is highly recommended that students complete certificate requirements prior to degree requirements.

Learning Outcomes

• Demonstrate proper use of special tools.

• Use safety equipment properly.

• Dissemble, perform critical measurements, resemble, and demonstrate satisfactory operation of components.

• Perform job specific tasks as required for NATEF accreditation.

• Demonstrate proper use of tools and equipment commonly found in industry.

• Research proper service information using common current industry technology.

• Demonstrate proper care and use of emerging technology tools and equipment.

• Demonstrate proper care and use of alternative energy tools and equipment.

• Demonstrate proficiency and understanding of emerging technologies.

Accreditation

The Automotive Technology program is certified by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF) Board.

Degree Specific Requirements

REQUIRED CORE COURSES

AUTO-105: Internal Combustion Engines
AUTO-110: Automotive Electrical Systems
AUTO-120: Automotive Fuel Management Systems
AUTO-131: Automotive Ignition Systems
AUTO-150: Automotive Diagnosis and Engine Evaluation
AUTO-187: Automotive Engine Tune-up
AUTO-215: Automotive Engine Dynamometer
AUTO-230: Automotive Diesel Principles
AUTO-237: Computerized Engine/Vehicle Emission Control

Minimum Number Of Credits To Graduate

20.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.
Lawrence Technological University
Wayne State University

Career Opportunities

• Data Evaluation Specialist
• Dynamometer Technician
• Engineering Technician
• Test Driver

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Basic Machine Tool Technology/CNC Certificate

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE

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Basic Machine Tool Technology / CNC Certificate

Certificate of Achievement
Program Code: CNCBA.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Guy Pizzino • (313) 845-6331 • gpizzino@hfcc.edu • Technology Bldg • Room: E-117B

Program Information

Description

Provides students with the opportunity to obtain basic Computer Numerical Control (CNC) knowledge and skills. Students enrolled in the program will receive training on the latest equipment used in the modern business environment, and will develop basic skills in the use and application of CNC equipment. The attainment of the Basic CNC Certificate in Manufacturing Productivity Systems offers evidence to employers that the individual has reached the basic level of proficiency.

Learning Outcomes

- Develop knowledge of career opportunities and demonstrate the requisite entry level machining and measurement skills for the Manufacturing Industry.

- Practice safe work habits in an industrial manufacturing environment.

- Create a basic or complex part on non-computerized industry standard machining and turning equipment.

- Create complete complex parts on computer controlled machining centers.

- Create complete complex parts on computer controlled turning centers.

- Utilize quality control concepts to identify root cause part discrepancies.

Degree Specific Requirements

REQUIRED CORE COURSES

MTT-100: Machine Tool Processes I
MTT-130: Quality Control Gaging and Inspection
MTT-140: Introduction to CNC
MTT-145: CNC Operations
MTT-146: Introduction to Machine Tool Probing
MTT-147: Basic Macro Programming for CNC
MTT-148: Advanced CNC Probing

Minimum Credit Hours: 17.0

Minimum Number Of Credits To Graduate

17.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

The courses required for this certificate are all accepted towards an associate degree to improve a student's employability. The certificate can be used as a building block toward an Associate in Applied Science degree. Individuals who are already employed may find that the certificate increases the opportunity for promotion.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

CAD - CAM Technician

ASSOCIATE IN APPLIED SCIENCE

CAD - CAM Technician

Associate in Applied Science
Program Code: CADCAMTECH.AAS

Contact

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Roger Weekes • (313) 317-1582 • rrweekes@hfcc.edu • Technology Bldg • Room: E-164B

Program Information

Description

Offers the opportunity to develop skills in both Computer-Aided Design and Computer-Aided Manufacturing/CNC. This multi-disciplinary program between HFC's Drafting/CAD and Machine Tool Technology departments is based in both CAD and CNC technologies. Together these areas help students develop a foundation and the necessary hands-on experience that leads to better designed and manufactured products. Utilizing both disciplines, students who are successful gain a deeper appreciation for the resources and complexities that exist in each area independently, and as they work together in industry. Students develop and refine the skills and experience needed by entry-level and experienced CAD-CAM Technicians.

Learning Outcomes

- Utilize drafting principles to read and comprehend a part drawing.
- Apply and layout dimensions on a part drawing for manufacturing.
- Create a part design using 3-D CAD software program.
- Create orthographic views of a part design utilizing 3-D CAD software program.
- Create section views of a part.
- Create complete complex parts on computer controlled machining centers.
- Create complete complex parts on computer controlled turning centers.
- Synthesize information using numerical control software to complete three-dimensional parts on computer controlled milling and turning centers.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credits from each of the five areas below. For this program:

1. **Civil Society and Culture:**

   Complete at least one of the following:
   HIST-151: American History I
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete the following:
   MATH-100: Basic Technical Mathematics

NOTE:
For this program, General Education minimum credits: 16

CAD - CAM Technician

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core and/or Elective Courses for this program.

REQUIRED CORE COURSES

DRAF-120: Introduction to CAD
DRAF-123: Introduction to CATIA V5
DRAF-125: CATIA V5 Level II
DRAF-127: CATIA V5 Level III
DRAF-142: Industrial Detailing
DRAF-230: Jigs, Fixtures, and Tools
DRAF-260: Advanced CAD Applications Solid Modeling
MTT-100: Machine Tool Processes I
MTT-140: Introduction to CNC
MTT-145: CNC Operations
MTT-146: Introduction to Machine Tool Probing
MTT-147: Basic Macro Programming for CNC
MTT-148: Advanced CNC Probing
MTT-160: Computer Assisted N/C Programming
MTT-170: Advanced Computer Assisted N/C Programming

Minimum Credit Hours: 41.0

ELECTIVE COURSES

Choose 6 credit hours from the following courses:
DRAF-255: Advanced Techniques
MTT-130: Quality Control Gaging and Inspection
MTT-150: Statistical Process Control (SPC) In Manufacturing
ICO-190: Co-op in Industrial Technology
ICO-290: Co-op in Industrial Technology

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

63.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

CATIA V5 Certification and Haas CNC Certification.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Central Michigan University
Davenport University
Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn
Wayne State University

Career Opportunities

CAD Operator
Engineering Technician
CAD/CAM Technician
Designer
Drafter
Process Engineer
CNC Set-up Technician
CNC Operator
Sales & Service Technician
Quality Lab Technician

INDUSTRIAL TECHNOLOGY

CAD Technology – Industrial Drafting - SolidWorks

CERTIFICATE OF ACHIEVEMENT

CAD Technology - Industrial Drafting - SolidWorks

Certificate of Achievement
Program Code: CTECHSWRK.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Roger Weekes • (313) 317-1582 • rrweekes@hfcc.edu • Technology Bldg • Room: E-164B

Program Information

Description

Enables designers, engineers, and students with previous CAD background to become proficient in this powerful and versatile design software. Application modules include Sketcher, Part, Drawing, and Assembly. SolidWorks software is used by automotive tier one and tier two suppliers, appliance and furniture manufacturers, consumer products manufacturers, and medical equipment manufacturers.

Learning Outcomes

• Develop knowledge of career opportunities and demonstrate the requisite entry level CAD and Industrial Drafting skills for the Manufacturing Industry.

• Utilized drafting principles to read and comprehend a part drawing.

• Applied and layout dimensions on a part drawing for manufacturing.

• Create a part design using 3D CAD software program.

• Create orthographic views of a part design utilizing 3D CAD software program.

• Create section views of a part.

• Project an auxiliary view from an inclined surface.

Degree Specific Requirements

REQUIRED CORE COURSES

DRAF-122: SolidWorks Level I - Introduction
DRAF-124: SolidWorks Level II - Advanced
DRAF-126: SolidWorks Level III - Applications

Minimum Number Of Credits To Graduate

6.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

*CAD Drafter
*Designer
*Detailer
*SolidWorks Designer

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

CAD Technology – Industrial Drafting - UG NX

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE

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CAD Technology - Industrial Drafting - UG NX

Certificate of Achievement
Program Code: CTECHUGNX.CA

Contact

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Roger Weekes • (313) 317-1582 • rrweekes@hfcc.edu • Technology Bldg • Room: E-164B

Program Information

Description

Enables designers, engineers, and students with previous CAD background to become proficient in the use of the powerful and versatile UG NX design software, which is increasing in the automotive and aircraft industries. Coursework includes the most commonly used environments such as sketcher, part design, drafting, assembly, and surfacing. UG NX is Product Lifecycle Management (PLM) software.

Learning Outcomes

- Develop knowledge of career opportunities and demonstrate the requisite entry level CAD and Industrial Drafting skills for the Manufacturing Industry.

- Utilized drafting principles to read and comprehend a part drawing.

- Applied and layout dimensions on a part drawing for manufacturing.

- Create a part design using 3D CAD software program.

- Create orthographic views of a part design utilizing 3D CAD software program.

- Create section views of a part.

- Project an auxiliary view from an inclined surface.

Degree Specific Requirements

REQUIRED CORE COURSES

DRAF-131: UG NX Level 1 - Introduction
DRAF-132: UG NX Level II - Intermediate
DRAF-133: UG NX Level III - Advanced
DRAF-134: UG NX Level IV - Applications

Minimum Number Of Credits To Graduate

8.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

*CAD Drafter
*Designer
*Detailer
*UG NX Designer

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

CAD Technology – Industrial Drafting

ASSOCIATE IN APPLIED SCIENCE

CAD Technology — Industrial Drafting

Associate in Applied Science
Program Code: DFCAD.AAS

Contact

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Roger Weekes • (313) 317-1582 • rrweekes@hfcc.edu • Technology Bldg • Room: E-164B

Program Information

Description

Provides experience with CAD programs and applications. Begins with manual drafting and progresses to CAD design, detailing, and problem solving. Includes exposure to a wide variety of drafting specialties such as: layout and detailing in product design, machine element drafting, fixture design, and die design. Utilizes current design software.

Learning Outcomes

- Develop knowledge of career opportunities and demonstrate the requisite entry-level CAD and industrial drafting skills for the manufacturing industry.

- Utilize drafting principles to read and comprehend a part drawing.

- Apply and layout dimensions on a part drawing for manufacturing.

- Create a part design using 3-D CAD software program.

- Create orthographic views of a part design utilizing 3-D CAD software program.

- Create section views of a part.

- Project an auxiliary view from an inclined surface.

- Apply sketching techniques to sketch objects orthographically and pictorially.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Culture:**
   Complete one of the following:
   HIST-151: American History I
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

NOTE:
For this program, General Education minimum credits: 16

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

DRAF-110: Introduction to Industrial Drafting
DRAF-120: Introduction to CAD
DRAF-130: Technical Descriptive Geometry
DRAF-142: Industrial Detailing
DRAF-210: Die Design
DRAF-220: Machine Element Drafting
DRAF-230: Jigs, Fixtures, and Tools
DRAF-240: Product Drawing
DRAF-255: Advanced Techniques
DRAF-260: Advanced CAD Applications Solid Modeling

Minimum Credit Hours: 32.0

CAD Technology – Industrial Drafting
ASSOCIATE IN APPLIED SCIENCE

REQUIRED SUPPORT COURSES

MTT-100: Machine Tool Processes I
MTT-130: Quality Control Gaging and Inspection

Minimum Credit Hours: 7.0

ELECTIVE COURSES

Complete 8 credit hours from the following courses:
DRAF-123: Introduction to CATIA V5
DRAF-125: CATIA V5 Level II
DRAF-127: CATIA V5 Level III
ELEC-103: Basic Electricity
ELEC-120: Basic Hydraulics
ICO-190: Co-op in Industrial Technology
ICO-290: Co-op in Industrial Technology

Minimum Credit Hours: 8.0

Minimum Number Of Credits To Graduate

63.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Central Michigan University
Davenport University
Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn
Wayne State University

Career Opportunities

*CAD Drafter
*CAD Manager
*Design Engineer
*Designer
*Detailer
*Mechanical Engineer
*SolidWorks Designer
*UGNX Designer

INDUSTRIAL TECHNOLOGY

CAD Technology – Industrial Drafting - CATIA
CERTIFICATE OF ACHIEVEMENT

CAD Technology — Industrial Drafting - CATIA

Certificate of Achievement
Program Code: CATIA.CA.

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Roger Weekes • (313) 317-1582 • rrweekes@hfcc.edu • Technology Bldg • Room: E-164B

Program Information

Description

Enables designers, engineers, and students with previous CAD background to become knowledgeable and proficient in this powerful and versatile software. Usage of CATIA V5 is increasing in the automotive and supplier industry. Course work covers some of the most commonly used Work Benches such as Sketcher, Part, Drafting, Assembly, and Generative Shape Design (surfacing).

Learning Outcomes

- Develop knowledge of career opportunities and demonstrate the requisite entry level CAD and Industrial Drafting skills for the Manufacturing Industry.
- Utilized drafting principles to read and comprehend a part drawing.
- Applied and layout dimensions on a part drawing for manufacturing.
- Create a part design using 3D CAD software program.
- Create orthographic views of a part design utilizing 3D CAD software program.
- Create section views of a part.
- Project an auxiliary view from an inclined surface.

Degree Specific Requirements

REQUIRED CORE COURSES

DRAF-123: Introduction to CATIA V5
DRAF-125: CATIA V5 Level II
DRAF-127: CATIA V5 Level III

Minimum Number Of Credits To Graduate

6.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

*CAD Drafter
*CATIA Designer
*Designer
*Design Engineer
*Detailer

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Electrical Technology

ASSOCIATE IN APPLIED SCIENCE

Electrical Technology

Associate in Applied Science
Program Code: ELECT.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Mark Siedlik • (313) 845-6353 • msiedlik@hfcc.edu • Technology Bldg • Room: E-115E

Program Information

Description

Introduces the basic principles of electricity and proceeds to the concepts of solid state components such as diodes, transistors, integrated circuits, and microprocessor systems. Advanced courses show how these fundamental principles are applied to machine control, computers, power supplies, amplifiers, oscillators, industrial control, and instrumentation systems. Courses simulate actual working conditions in five fully-equipped laboratories where students put electrical-electronics theory into practice. Along with laboratory experiences setting up circuits, troubleshooting, and calibrating systems, computer-simulated circuit analysis is used in the majority of the courses.

Learning Outcomes

- Apply laws to the design, construction, analysis, and measurement of electric, hydraulic, and pneumatic circuits.

- Interpret and develop technical drawings, schematics, and diagrams.

- Create documents based on technical information using descriptive writing, diagrams, mathematical expression, computation, and graphs.

- Perform electrical/mechanical assembly/disassembly, repair, troubleshoot, and calibration of components and devices.

- Break out into mechanical and electrical.

- Apply electrical/mechanical laws to the operation and control of machines.

- Apply critical thinking skills to solving electro-mechanical problem.

- Communicate and perform effectively within a team environment.

- Develop PLC, HMI, and robot programs for the control of electro-mechanical systems.

- Analyze a set of specifications and create a LabView virtual instrument.

- Apply electro-mechanical laws to the application of specific industrial sensors/transducers.

- Evaluate sensor/transducer output based on computer generated data for the purpose of creating a lab report using Microsoft Office products.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Culture:**

   Complete at least one of the following:
   HIST-151: American History I
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132:College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete the following:
   MATH-100: Basic Technical Mathematics

NOTE:
For this program, General Education minimum credits: 16

Electrical Technology

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

ELEC-103: Basic Electricity
ELEC-106: Basic Electronics
ELEC-115: Digital Circuits 1
ELEC-120: Basic Hydraulics
ELEC-145: AC/DC Rotating Machinery
ELEC-155: Analog Electronics 1
ELEC-185: Pneumatics
ELEC-195: AC/DC Circuit Analysis
ELEC-200: Ladder Diagrams and Motor Controls
ELEC-245: Programmable Controllers
ELEC-255: Instrumentation Systems
ELEC-260: Automation Controls and Robotics
ELEC-295: Microprocessor Systems

Minimum Credit Hours: 40.0

REQUIRED SUPPORT COURSES

Complete 10 credit hours from the following courses:
AUTO-101: Automotive Fundamentals
CIS-125: Principles of Programming Logic
CIS-170: C Programming
DRAF-110: Introduction to Industrial Drafting
DRAF-120: Introduction to CAD
ENT-101: Introduction to Energy Technology
MTT-100: Machine Tool Processes I
MTT-140: Introduction to CNC
PHYS-131: General Physics I

Minimum Credit Hours: 10.0

Minimum Number Of Credits To Graduate

66.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn
Wayne State University

Career Opportunities

Computer Service
Instrumentation Set-up
Machine Service
Quality Control
Research and Development
Machine Controls
Instrumentation Repair
Microprocessor Systems
Product Evaluation
Sales

Articulation Agreements:

3+1 Articulation with Eastern Michigan University, Bachelor of Science in Electrical Engineering Technology.

3+1 Articulation with Ferris State, Bachelor in Applied Science in Industrial Technology & Management.

INDUSTRIAL TECHNOLOGY

Electrical Technology – Analog Electronics

CERTIFICATE OF ACHIEVEMENT

Electrical Technology — Analog Electronics

Certificate of Achievement
Program Code: ANAELEC.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Mark Siedlik • (313) 845-6353 • msiedlik@hfcc.edu • Technology Bldg • Room: E-115E

Program Information

Description

Analog electronics deals with infinitely varying signals and the components that amplify and operate with these varying signals. Topics in this area include diodes, rectification, filtration, amplification, transistors, scr, triacs, diacs, sensors and instrumentation. This certificate can be earned while pursuing an Associate in Applied Science degree in Electrical Technology.

Learning Outcomes

- Demonstrate the ability to apply laws to the design, construction, analysis, and measurement of electric, hydraulic and pneumatic circuits.

- Interpret and develop technical drawing, schematics and diagrams.

- Create documents based on technical information using descriptive writing, diagrams, mathematical expression, computation, and graphs.

- Apply electrical/mechanical laws to the operation and control of machines.

- Apply critical thinking skills to solving problems.

- Demonstrate the ability to communicate and perform in a team environment.

- Analyze a set of specifications and create a LabView virtual instrument.

- Apply electro/mechanical output based on computer generated data for the purpose of creating a lab manual using Microsoft Office products.

Degree Specific Requirements

REQUIRED CORE COURSES

ELEC-103: Basic Electricity
ELEC-106: Basic Electronics
ELEC-155: Analog Electronics 1
ELEC-195: AC/DC Circuit Analysis
ELEC-255: Instrumentation Systems
ICO-190: Co-op in Industrial Technology
MATH-103: Technical Mathematics or higher level MATH

Minimum Number Of Credits To Graduate

21.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Electrical Technology — Automation Controls

Certificate of Achievement
Program Code: AUTOCNTRL.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Mark Siedlik • (313) 845-6353 • msiedlik@hfcc.edu • Technology Bldg • Room: E-115E

Program Information

Description

Geared toward people working in industry that need the skills directly related to their job in industrial controls. Also Electrical Engineers, who may have a theoretical four year degree, may want to consider taking some of the classes in the certificate; especially ELEC 245- Programmable Controllers and ELEC 260-Automation Controls and Robotics. This certificate can be earned while pursuing an Associate in Applied Science degree in Electrical Technology.

Learning Outcomes

- Demonstrate the ability to apply laws to the design, construction, analysis, and measurement of electric, hydraulic and pneumatic circuits.

- Interpret and develop technical drawing, schematics and diagrams.

- Perform electrical/mechanical assembly/dis-assembly, repair, troubleshoot, and calibration of components and devices.

- Apply electrical/mechanical laws to the operation and control of machines.

- Apply critical thinking skills to solving problems.

- Demonstrate the ability to communicate and perform in a team environment.

- Students will be Able to develop PLC, HMI, Robot programs for the control of electro/mechanical systems.

Degree Specific Requirements

REQUIRED CORE COURSES

ELEC-103: Basic Electricity
ELEC-145: AC/DC Rotating Machinery
ELEC-200: Ladder Diagrams and Motor Controls
ELEC-245: Programmable Controllers
ELEC-260: Automation Controls and Robotics
MATH-103: Technical Mathematics or higher level MATH

Minimum Number Of Credits To Graduate

20.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Electrical Technology – Basic Electronics

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE
FUTUREDRIVEN

Electrical Technology — Basic Electronics

Certificate of Achievement
Program Code: BASICELEC.CA

Contact

Industrial Technology Division • (313) 845-9656 •
technology@hfcc.edu • Technology Bldg • Room: E-172

Mark Siedlik • (313) 845-6353 • msiedlik@hfcc.edu •
Technology Bldg • Room: E-115E

Program Information

Description

Covers the fundamental of electricity and electronics as applied to the electrical field. Topics include Ohm's and Watts Law, circuits, magnetism, inductance, resistance, capacitance and alternating current circuits. Also covers an introduction to solid state devices such as diodes, transistors, and JFET's. Utilizes voltmeters, ammeters, power supplies, signal generators, and oscilloscopes to construct circuits during lab activities. This certificate can be earned while pursuing an Associate in Applied Science degree in Electrical Technology.

Learning Outcomes

• Demonstrate the ability to apply laws to the design, construction, analysis, and measurement of electric, hydraulic and pneumatic circuits.

• Interpret and develop technical drawing, schematics and diagrams.

• Apply electrical/mechanical laws to the operation and control of machines.

• Apply critical thinking skills to solving problems.

Degree Specific Requirements

REQUIRED CORE COURSES

ELEC-103: Basic Electricity
ELEC-106: Basic Electronics
MATH-103: Technical Mathematics or higher level MATH

Minimum Number Of Credits To Graduate

10.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Electrical Technology — Digital Electronics

Certificate of Achievement
Program Code: DIGITALELEC.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Mark Siedlik • (313) 845-6353 • msiedlik@hfcc.edu • Technology Bldg • Room: E-115E

Program Information

Description

Digital electronics is that branch of electronics dealing with finite and discrete signal levels. Most digital signals are binary: they are either high or low. Students can earn this certificate while pursing an Associate in Applied Science degree in Electrical Technology.

Learning Outcomes

- Demonstrate the ability to apply laws to the design, construction, analysis, and measurement of electric, hydraulic and pneumatic circuits.

- Interpret and develop technical drawing, schematics and diagrams.

- Create documents based on technical information using descriptive writing, diagrams, mathematical expression, computation, and graphs.

- Apply critical thinking skills to solving problems.

Degree Specific Requirements

REQUIRED CORE COURSES

ELEC-103: Basic Electricity
ELEC-106: Basic Electronics
ELEC-115: Digital Circuits 1
ELEC-195: AC/DC Circuit Analysis
ELEC-295: Microprocessor Systems
MATH-103: Technical Mathematics or higher level MATH

Minimum Credit Hours: 19.0

Minimum Number Of Credits To Graduate

19.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Energy Technology - Multi-Skilled Facility Maintenance Technician

Associate in Applied Science
Program Code: MSFMT.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Gregory Laskowsky • (313) 317-1550 • glaskowsky@hfcc.edu • Technology Bldg • Room: E-115D

Program Information

Description

Prepares students for a career in building/plant facility maintenance. Focuses on job safety, basic electricity, heating and cooling, sheet metal fabrication, EPA refrigeration certification, power engineering (exposure to boilers and hydronic systems), building controls, hydraulics, plumbing and pipe fitting, millwright basics (applied tech), and welding.

Learning Outcomes

• Apply basic skills in HVAC installation, maintenance, and repair.

• Operate basic boiler and hydronic systems.

• Troubleshoot basic electrical equipment utilizing theories of electricity.

• Demonstrate installation and maintenance plumbing and pipe fitting skills.

• Demonstrate basic welding skills.

• Communicate effectively in the workplace using interpersonal and computer skills.

• Apply basic carpentry skills such as measuring, cutting, and shaping wood and other building materials.

• Employ basic millwright skills.

• Apply basic fabricating/sheet metal working skills such as layout and fabrication of sheet metal fittings.

• Apply basic machine repair skills.

• Apply basic skills in installation and troubleshooting of instrumentation and controls.

• Utilize the appropriate tools as dictated by the project.

• Demonstrate consistent adherence to standard safety protocols.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete at least one of the following:
   HIST-151: American History I
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete at least one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

NOTE:
For this program, General Education minimum credits: 16

INDUSTRIAL TECHNOLOGY

Energy Technology – Multi-Skilled Facility Maintenance Technician

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core and/or Elective Courses for this program.

REQUIRED CORE COURSES

ENT-103: AC and DC Electricity
ENT-104: Heating Technology
ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
ENT-106: Sheet Metal Fabrication
ENT-108: Introduction to Heating and Cooling Codes
ENT-109: HVAC Installation and Start-Up
ENT-113: Refrigeration Technology
ENT-119: Air Conditioning Technology
ENT-124: Construction Blueprint Reading
ENT-125: Steam and Hot Water Heating Systems
ENT-219: RACH Light Commercial Systems
ENT-269: Energy Technology Project Management

Minimum Credit Hours: 32.0

ELECTIVE COURSES

Complete a minimum of 20 credit hours from the following courses:
ELEC-106: Basic Electronics
ELEC-120: Basic Hydraulics
ELEC-185: Pneumatics
ELEC-195: AC/DC Circuit Analysis
ELEC-200: Ladder Diagrams and Motor Controls
ELEC-245: Programmable Controllers
ELEC-255: Instrumentation Systems
ELEC-260: Automation Controls and Robotics
ELEC-295: Microprocessor Systems
ENT-141: Power Engineering I Energy Conversion Fundamentals
ENT-145: Power Engineering II Boilers and Auxiliaries
ENT-216: Light Commercial Refrigeration
MTT-100: Machine Tool Processes I
MTT-110: Machine Tool Processes II
PLMB-101: Fundamentals of Plumbing and Pipefitting
PLMB-110: Drains, Wastes, and Vents
PLMB-250: Plumbing Pipefitting Code
CIMWD-100: Weld Joint Design and Preparation (Safety/Joint Design)
CIMWD-101: Weld Joint Design and Preparation (Welding Code, Weld Measurement, and Hand Tools)
CIMWD-102: Weld Joint Design and Preparation (Material Cutting, Grinding, and Fabrication)

Minimum Number Of Credits To Graduate

68.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Many large and small companies are combining trades and as a result, are seeking individuals for employment in this fast-growing profession.

Heating, ventilating, and air conditioning (HVAC)
Power Engineering
Building Controls
Plumbing
Electrical
Welding
Hydraulics
Millwright
Renewable Energy

Class credits earned at HFC can be transferred to other academic institutions. Transfer information is available in the University Transfer, Advising, and Career Counseling Center or contact your academic advisor.

INDUSTRIAL TECHNOLOGY

Energy Technology – Alternative Energy

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

FUTUREDRIVEN

Energy Technology — Alternative Energy

Associate in Applied Science
Program Code: ALTENGRY.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Gregory Laskowsky • (313) 317-1550 • glaskowsky@hfcc.edu • Technology Bldg • Room: E-115D

Program Information

Description

Covers alternative automotive propulsion, green construction, energy system design, blueprint reading; wind, solar, and fuel cell technology, geothermal systems, refrigeration, and AC/DC electricity.

Learning Outcomes

- Distinguish the full range of renewable energy technologies and their applications.

- Describe how mechanical components of renewable energy technologies that are economically relevant work (wind, solar PV, solar thermal, batteries, geothermal, small hydropower, fuel cells, alternatively fueled vehicles, and biomass).

- Demonstrate basic principles of electrical repair and installation while employing appropriate safety measures.

- Demonstrate the installation, maintenance, and repair of small wind generators, solar PV, solar thermal hot water systems, basic biomass. combustion systems, and above-ground components of geothermal systems following manufacturer specifications.

- Compare and contrast the environmental impact and economic role of both traditional and alternative energy supplies.

- Perform building energy audits for residential and commercial buildings.

- Perform energy efficient upgrades to building envelopes, HVAC equipment, and controls.

- Describe and apply mechanical, building, plumbing, electrical, and energy codes, standards, local ordinances, and state and federal regulations.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete at least one of the following:
   HIST-151: American History I
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete the following course:
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete at least one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra

NOTE:
For this program, General Education minimum credits: 16

INDUSTRIAL TECHNOLOGY

Energy Technology – Alternative Energy

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

ENT-101: Introduction to Energy Technology
ENT-103: AC and DC Electricity
ENT-104: Heating Technology
ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
ENT-260: Energy Systems Management
ENT-265: Energy Systems Design
ENT-269: Energy Technology Project Management
REEN-110: Geothermal Systems and Water Furnace Technology
REEN-120: Wind, Solar, and Fuel Cell Technology
REEN-130: Smart Home Control Technology
REEN-140: Cogeneration and Backup Power
REEN-160: Energy Auditing/Weatherization
REEN-161: Energy Auditing/Weatherization Certification Lab
REEN-170: Battery Technologies
REEN-180: Hydropower

Minimum Credit Hours: 39.0

REQUIRED SUPPORT COURSES

Choose one pathway:

Automotive Path (11 credits)

AUTO-102: Related Technical Automotive
AUTO-105: Internal Combustion Engines
AUTO-120: Automotive Fuel Management Systems
AUTO-260: Alternative Automotive Propulsion Systems

Architectural Path (12 credits)

ACT-101: Fundamentals of Architecture
ACT-109: Residential Energy Efficiency and Sustainability
ACT-116: Basic Architectural CAD
ACT-175: Environmental Building Systems

Minimum Credit Hours: 11.0

Minimum Number Of Credits To Graduate

66.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Siena Heights University
Wayne State University

Career Opportunities

Automotive - Fuels, Battery
Developing jobs in wind, photovoltaic, construction, automotive, consulting, design, and financial development.
Energy Auditing - Weatherization
Fuel Cell Technology
Geothermal - Planning, Development
Photovoltaic - Installations, Sales, Design
Wind Turbine - Manufacture, Assembly, Assessment

INDUSTRIAL TECHNOLOGY

Energy Technology – Boiler License Review Basic

CERTIFICATE OF ACHIEVEMENT

Energy Technology — Boiler License Review Basic

Certificate of Achievement
Program Code: BLRBA.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

James Martini • (313) 845-6453 • jmartini@hfcc.edu • Technology Bldg • Room: E-211L

Program Information

Description

Designed for students seeking to enter the boiler operation, power plant operation or facilities operation and maintenance fields. Through the use of laboratory activities, students operate boilers, engines, turbines, and heating and cooling equipment.

Courses in the certificate may also be applied to the Energy Technology — Power/Building Engineer Advanced Certificate. All courses in the certificate program may also be applied to an Associate in Applied Science degree in Energy Technology — Power/Building Engineer.

Learning Outcomes

- Use proper tools, materials and equipment necessary for completing mechanical operations on residential and light commercial HVAC-R systems and equipment.

- Utilize standard safety procedures.

- Demonstrate both soft skills and communication skills including reading comprehension, computer skills, communication, and customer service.

- Troubleshoot electrical systems and controls in HVAC-R equipment.

- Interpret mechanical, electrical, and control diagrams relevant to the HVAC-R industry.

- Apply manufacturer specifications for HVAC-R equipment and systems.

- Demonstrate energy auditing and energy management for efficiency.

- Perform preventive maintenance according to service agreements.

Degree Specific Requirements

REQUIRED CORE COURSES

ENT-103: AC and DC Electricity
ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
ENT-141: Power Engineering I Energy Conversion Fundamentals
ENT-145: Power Engineering II Boilers and Auxiliaries
ENT-256: Power Engineering III Steam Plant Systems-Equipment
ENT-259: Power Engineering IV - Plant/Building Operations and Maintenance

Minimum Credit Hours: 17.0

Minimum Number Of Credits To Graduate

17.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Upon completing this certificate program, students may choose to contact local license agencies for assistance with meeting the requirements to take a HP Boiler, LP Boiler or National Institute for the Uniform Licensing of Power Engineers (NIULPE) 4th Class license exam.

Career Opportunities

Boiler
HVAC
Refrigeration
Air conditioning areas such as sales, service, installation, maintenance, and repair of buildings and their related mechanical and electrical systems

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Energy Technology – Heating and Cooling Advanced

CERTIFICATE OF ACHIEVEMENT

Energy Technology — Heating and Cooling Advanced

Certificate of Achievement
Program Code: HCOOLAD.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Gregory Laskowsky • (313) 317-1550 • glaskowsky@hfcc.edu • Technology Bldg • Room: E-115D

Program Information

Description

Designed for individuals interested in taking the next step into the residential and light commercial heating and cooling industry. Provides entry-level theory and laboratory experiences as well as advanced course work in commercial heating and refrigeration, light commercial controls, heating and cooling mechanical codes, installation, energy management, and energy system design. All courses in the certificate program may be applied to an Associate of Applied Science degree in Energy Technology — HVAC.

NOTE:
Students who successfully complete this certificate may choose to pursue employment opportunities by taking certificate exams through the Air Conditioning, Heating, Refrigeration Institute (AHRI), Air Conditioning Contractors of America (ACCA), EPA Refrigerant Recovery, and eventually sit for the State of Michigan Mechanical Contractors Test. However, these exams are not included in this program.

Learning Outcomes

- Use proper tools, materials and equipment necessary for completing mechanical operations on residential and light commercial HVAC-R systems and equipment.

- Utilize standard safety procedures.

- Demonstrate both soft skills and communication skills including reading comprehension, computer skills, communication, and customer service.

- Troubleshoot electrical systems and controls in HVAC-R equipment.

- Interpret mechanical, electrical, and control diagrams relevant to the HVAC-R industry.

- Apply manufacturer specifications for HVAC-R equipment and systems.

- Demonstrate energy auditing and energy management for efficiency.

- Perform preventive maintenance according to service agreements.

Degree Specific Requirements

REQUIRED CORE COURSES

ENT-100: Basic Workplace Skills
ENT-101: Introduction to Energy Technology
ENT-103: AC and DC Electricity
ENT-104: Heating Technology
ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
ENT-106: Sheet Metal Fabrication
ENT-108: Introduction to Heating and Cooling Codes
ENT-109: HVAC Installation and Start-Up
ENT-113: Refrigeration Technology
ENT-119: Air Conditioning Technology
ENT-124: Construction Blueprint Reading
ENT-125: Steam and Hot Water Heating Systems
ENT-141: Power Engineering I Energy Conversion Fundamentals
ENT-212: Commercial Heating
ENT-216: Light Commercial Refrigeration
ENT-219: RACH Light Commercial Systems
ENT-260: Energy Systems Management
ENT-265: Energy Systems Design
ENT-269: Energy Technology Project Management

Minimum Credit Hours: 52.0

Minimum Number Of Credits To Graduate

52.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Energy Conservation Technician
Facilities Maintenance Technician
HVAC Service and Installation Technician
Representative for power equipment or instrument and control equipment found in buildings of all sizes.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Energy Technology – HVAC

ASSOCIATE IN APPLIED SCIENCE

Energy Technology — HVAC

Associate in Applied Science
Program Code: HVAC.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Gregory Laskowsky • (313) 317-1550 • glaskowsky@hfcc.edu • Technology Bldg • Room: E-115D

Program Information

Description

Presents an overall study of the principles of energy production and its uses. Course work provides students who are successful with a well-rounded background in the principles of measurement, conservation and operation and repair of residential/commercial heating, and air conditioning and refrigeration equipment. While working on this degree, students also have the opportunity to earn the Energy Technology — HVAC Basic Certificate and the Energy Technology — HVAC Advanced Certificate.

Learning Outcomes

- Use proper tools, materials, and equipment necessary for completing mechanical operations on residential and light commercial HVAC-R systems and equipment.

- Utilize standard safety procedures.

- Demonstrate both soft skills and communication skills including reading comprehension, computer skills, communication, and customer service.

- Troubleshoot electrical systems and controls in HVAC-R equipment.

- Interpret mechanical, electrical, and control diagrams relevant to the HVAC-R industry.

- Apply manufacturer specifications for HVAC-R equipment and systems.

- Demonstrate energy auditing and energy management for efficiency.

- Perform preventative maintenance according to service agreements.

- Demonstrate effective project management skills.

- Design and select equipment for HVAC-R systems including duct work.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

    Complete at least one of the following:
    HIST-151: American History I
    HIST-152: American History II
    POLS-131: Introduction to American Government and Political Science
    SOC-131: Introduction to Sociology

2. **Communication:**

    Complete the following:
    ENG-131: Introduction to College Writing

3. **Computer Technology:**

    Complete the following:
    CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

    Complete the following:
    ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

    Complete at least one of the following:
    MATH-100: Basic Technical Mathematics
    MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
    MATH-110: Intermediate Algebra

NOTE:
For this program, General Education minimum credits: 16

Energy Technology – HVAC

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core Courses for this program.

REQUIRED CORE COURSES

- ENT-100: Basic Workplace Skills
- ENT-101: Introduction to Energy Technology
- ENT-103: AC and DC Electricity
- ENT-104: Heating Technology
- ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
- ENT-106: Sheet Metal Fabrication
- ENT-108: Introduction to Heating and Cooling Codes
- ENT-109: HVAC Installation and Start-Up
- ENT-113: Refrigeration Technology
- ENT-119: Air Conditioning Technology
- ENT-124: Construction Blueprint Reading
- ENT-125: Steam and Hot Water Heating Systems
- ENT-141: Power Engineering I Energy Conversion Fundamentals
- ENT-212: Commercial Heating
- ENT-216: Light Commercial Refrigeration
- ENT-219: RACH Light Commercial Systems
- ENT-260: Energy Systems Management
- ENT-265: Energy Systems Design
- ENT-269: Energy Technology Project Management

Minimum Credit Hours: 52.0

Minimum Number Of Credits To Graduate

68.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

- Eastern Michigan University
- Ferris State University
- Siena Heights University
- Wayne State University

Career Opportunities

- Energy Conservation Technician
- Facilities Manager or Facilities Maintenance Technician
- Field Application Engineer
- Field Service Engineer
- HVAC Design/Estimating or Sales Engineer
- HVAC Project Manager
- HVAC Service and Installation Technician
- Licensed Power Engineer or Building Engineer
- Plant/Building Energy Manager
- Representative for power equipment or instrument and control equipment found in buildings of all sizes.
- Residential/Commercial Energy Auditor

Energy Technology – Power Engineering 1st and 2nd Class Steam - Refrigeration License Review Online

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE

FUTUREDRIVEN

Energy Technology — Power Engineering 1st and 2nd Class Steam - Refrigeration License Review Online

Certificate of Achievement
Program Code: PEFSCSRLRO.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

James Martini • (313) 845-6453 • jmartini@hfcc.edu • Technology Bldg • Room: E-211L

Program Information

Description

Provides refrigeration and steam study in the areas of 1st and 2nd class refrigeration operator license review and refrigeration journey-man and 1st and 2nd Class Steam License review. Information and review of the fundamentals of refrigeration thermodynamics, refrigerants, metering devices, refrigeration system components, refrigeration system operation for ammonia and other refrigerants and refrigeration system operation and maintenance is included with refrigeration. Boilers, basic thermodynamics, boiler operation & maintenance, boiler and plant efficiency and emissions control, pump, auxiliaries, power plant accessories, turbines, engines, electrical, compressors, internal combustion engines, power plant equipment, and review of national, state and local steam and boiler codes are included with steam.

Online study and courses are available for operations personnel who have had some power, process or maintenance field experience and are seeking their initial license or studying to obtain higher licenses. For those persons desiring to enter this field without field experience, it is recommended that they enroll in the regular classroom lab courses in the power engineering area at the college or consider taking the introductory online courses.

Learning Outcomes

- Solve basic math and science problems found within power building engineering.

- Demonstrate technical communication skill including reading and interpreting reports, diagrams, and manufacturer specifications and writing work orders, logs, etc.

- Apply safe workplace procedures including use of safety equipment in laboratory and field conditions.

- Maintain electrical systems in residential, commercial and industrial facilities.

- Maintain mechanical systems in residential, commercial and industrial facilities.

- Create work-plans to complete building exterior and landscape maintenance.

- Create work-plans to complete building interior and custodial maintenance.

- Maintain boilers, auxiliary equipment, and other steam generation equipment.

Degree Specific Requirements

REQUIRED CORE COURSES

MFMT-241: Power Engineering/Refrigeration License Review *
MFMT-248: Power Engineering - Steam License Review *

Minimum Credit Hours: 10.0

* 100% online course

Minimum Number Of Credits To Graduate

10.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

This Certificate is a review for the licenses listed below. It is not a program required for the "License." Students cannot necessarily receive a license upon completion of this certificate, but will be better prepared to take qualifying exams listed below.

Students completing this certificate may have the knowledge to take the NIULPE (National Institute for the Uniform Licensing of Power Engineers) 2nd, 1st or Chief Engineers License Exams on campus or through any one of the 20 + state licensing boards for NIULPE, if they have the required years of field experience for a specific steam license or may use the course to prepare for other local license agency steam license exams at various license levels.

Students completing this certificate may also have the knowledge to take the EPA Refrigerant Recovery Exam, and the Refrigeration portions of the NIULPE (National Institute for the Uniform Licensing of Power Engineers) 3rd, 2nd, 1st or Chief Engineers License Exams on campus or through any one of the 20 + state licensing boards for NIULPE, if they have the required years of field experience for a specific refrigeration license or may use the course to prepare for other local license agency refrigeration exams at various license levels.

NOTE:
This certificate does not qualify a person to take power engineering license exams. Specific experience requirements are required to take various license exams. Check with the license agency involved to ensure you have the required experience for the license you are seeking.

INDUSTRIAL TECHNOLOGY

Career Opportunities

A successful graduate earning the Certificate will have potential employment in occupations such as:

- Power Engineers
- Process Engineers
- Building Engineers
- Facility Engineers
- Stationary Engineers
- Technicians

Employment Outlook

The Projections of Employment, published by the Labor Market Information projects a 10% increase the number of Facilities Engineers and Stationary Engineers through 2012. The trend toward automated, centralized control of building operations has not reduced the need for Power, Building and Facilities Engineers. When automated systems are installed in older buildings, they often take the place of simpler systems and equipment that had not required the high-level services of Power, Facilities and Building Engineers.

Facilities Engineers and Stationary Engineers:

- Service industrial machinery, hospital equipment, plumbing fixtures, elevators, and other electrical or mechanical devices used on the premises.

- Monitor Control Room equipment including troubleshooting

- Machine/Equipment maintenance and some 'hands-on' repair.

- They also handle all aspects of the job; in others, they are assisted by helpers or maintenance personnel.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Energy Technology – Power Engineering High Pressure Boiler 3rd Class Steam - Steam License Review Online

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE
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Energy Technology — Power Engineering High Pressure Boiler 3rd Class - Steam License Review Online

Certificate of Achievement
Program Code: PEHPBTCSLRO.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

James Martini • (313) 845-6453 • jmartini@hfcc.edu • Technology Bldg • Room: E-211L

Program Information

Description

Provides students with a study of equipment, mechanical and electrical systems of buildings and plants, develops an understanding of individual elements and field systems, and prepares students for license exams for high pressure boiler operator and third class refrigeration and air conditioning engineers.

Online study and courses are available for operations personnel who have had some power, process or maintenance field experience and are seeking their initial license or studying to obtain higher licenses. For those persons desiring to enter this field without field experience, it is recommended that they enroll in the regular classroom lab courses in the power engineering area at the college or consider taking the introductory online courses.

Learning Outcomes

- Solve basic math and science problems found within power building engineering.

- Demonstrate technical communication including reading and interpreting reports, diagrams, and manufacturer specifications and writing work orders, logs, etc.

- Apply safe workplace procedures including use of safety equipment in laboratory and field conditions.

- Maintain electrical systems in residential, commercial and industrial facilities.

- Maintain mechanical systems in residential, commercial and industrial facilities.

- Create work-plans to complete building exterior and landscape maintenance.

- Create work-plans to complete building interior and custodial maintenance.

- Maintain boilers, auxiliary equipment, and other steam generation equipment.

Degree Specific Requirements

REQUIRED CORE COURSES

MFMT-114: Energy Conversion Principles, Tools, Instruments, and Processes
MFMT-116: High Pressure Boiler-3rd Class License Preparation
MFMT-241: Power Engineering/Refrigeration License Review

Minimum Credit Hours: 9.0

ELECTIVE COURSES

The following is NOT required within this program, but is suggested for the profession.

MFMT-151: Power Engineering Stationary Steam Core Skills

Minimum Credit Hours: 0.0

This program does not require any elective credits. The listed elective courses may be taken to enhance the advancement for students in the profession. Students within this program should meet with an academic advisor and Energy Technology — Power Engineering Technology faculty prior to registering for additional classes.

Minimum Number Of Credits To Graduate

9.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

This Certificate is a review for the licenses listed below. It is not a program required for the "License." Students cannot necessarily receive a license upon completion of this certificate. This program is for 3rd Class Steam or Refrigeration license review and HP Boiler license review. It is designed to prepare qualifying students to take:

1) NIULPE (National Institute for the Uniform Licensing of Power Engineers) 3rd or 4th Class Power Engineer Exams,

2) City of Detroit LP Boiler, HP Boiler or 3rd Class Steam or Refrigeration License Exams or

3) City of Dearborn LP Boiler, HP Boiler or 3rd Class Steam or Refrigeration License Exams.

(Please note that specific field experience and/or completion of qualified technical education programs are required to take Power Engineering and other license exams. Check with the license agency involved to ensure you have the required experience for the license you are seeking.)

INDUSTRIAL TECHNOLOGY

HENRY FORD COLLEGE
FUTUREDRIVEN

Energy Technology – Power Engineering High Pressure Boiler 3rd Class Steam - Steam License Review Online
CERTIFICATE OF ACHIEVEMENT

Career Opportunities

A successful graduate earning the Certificate will have potential employment in occupations such as:

* Power Engineers
* Process Engineers
* Building Engineers
* Facility Engineers
* Stationary Engineers
* Technicians

Employment Outlook

The Projections of Employment, published by the Labor Market Information projects a 10% increase the number of Facilities Engineers and Stationary Engineers through 2012. The trend toward automated, centralized control of building operations has not reduced the need for Power, Building and Facilities Engineers. When automated systems are installed in older buildings, they often take the place of simpler systems and equipment that had not required the high-level services of Power, Facilities and Building Engineers.

** Facilities Engineers and Stationary Engineers:**

* Service industrial machinery, hospital equipment, plumbing fixtures, elevators, and other electrical or mechanical devices used on the premises.

* Monitor Control Room equipment including troubleshooting.

* Machine/Equipment maintenance and some 'hands-on' repair.

* They also handle all aspects of the job; in others, they are assisted by helpers or maintenance personnel.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Energy Technology – Power/Building Engineer

ASSOCIATE IN APPLIED SCIENCE

Energy Technology — Power/Building Engineer

Associate in Applied Science
Program Code: PWRBLDENG.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

James Martini • (313) 845-6453 • jmartini@hfcc.edu • Technology Bldg • Room: E-211L

Program Information

Description

Provides the necessary background principles, concepts, and laboratory experience to enter the field of power engineering or assume a position in the building or small plant operation and maintenance areas. For students interested in becoming an operating engineer, boiler operator, building engineer, refrigeration and air conditioning engineer in generating plants, pumping stations, steam plants, heating plants, water treatment facilities, industrial refrigeration plants and commercial and industrial buildings.

Learning Outcomes

• Solve basic math and science problems found within power building engineering.

• Demonstrate technical communication ability including reading and interpreting reports, diagrams, and manufacturer specifications and writing work orders, logs, etc.

• Apply safe workplace procedures including use of safety equipment in laboratory and field conditions.

• Maintain electrical systems in residential, commercial, and industrial facilities.

• Maintain mechanical systems in residential, commercial, and industrial facilities.

• Maintain and sustain building envelopes and structural elements of buildings utilizing the concepts of operational maintenance, upgrading, green building feature implementation, energy efficiency, energy management, and commissioning/retro-commissioning.

• Maintain HVAC equipment in residential, commercial, and industrial settings.

• Maintain automated building control systems.

• Create work plans to complete building exterior and landscape maintenance.

• Create work plans to complete building interior and custodial maintenance.

• Maintain boilers, auxiliary equipment, and other steam generation equipment.

• Maintain combustion equipment including equipment associated with ash handling, fans and draft control, and pollution control.

• Maintain water handling and water treatment equipment.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credit hours, unless otherwise noted, from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete one of the following:
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following course:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete one of the following:
   CIS-100: Introduction to Information Technology
   TAFD-117: Industrial Computer Applications

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete one of the following:
   MATH-100: Basic Technical Mathematics
   MATH-103: Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-115: College Algebra
   MATH-175: Precalculus
   MATH-180: Calculus I

NOTE:
For this program, General Education minimum credits: 16

Energy Technology – Power/Building Engineer

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the General Education, Required Core, and Required Support courses for this program.

REQUIRED CORE COURSES

ENT-100: Basic Workplace Skills
ENT-101: Introduction to Energy Technology
ENT-103: AC and DC Electricity
ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
ENT-141: Power Engineering I Energy Conversion Fundamentals
ENT-145: Power Engineering II Boilers and Auxiliaries
ENT-256: Power Engineering III Steam Plant Systems-Equipment
ENT-259: Power Engineering IV - Plant/Building Operations and Maintenance
PEFT-112: Technical Communication-Power
PEFT-262: Commercial-Industrial Energy System Assessment-Auditing

Minimum Credit Hours: 25.0

REQUIRED SUPPORT COURSES

Complete 7 credit hours from the following:
PEFT-247: Combined and Cogeneration Power Plants
PEFT-249: Energy System Test and Measurement Analysis
MFMT-115: Boiler Low Pressure Heating Plant Operation and Maintenance
MFMT-116: High Pressure Boiler-3rd Class License Preparation
MFMT-151: Power Engineering Stationary Steam Core Skills

Complete 12 credit hours from the following:
ENT-212: Commercial Heating OR MFMT-154 - Industrial Furnace Control
ENT-216: Light Commercial Refrigeration
ENT-219: RACH Light Commercial Systems OR MFMT 224 - Automated Control Systems I
ENT-230: Michigan Mechanical Contractor - License Preparation Or equivalent college-level learning certification or licensure
ENT-235: Power-Facilities Controls Calibration
MFMT-241: Power Engineering/Refrigeration License Review
MFMT-248: Power Engineering - Steam License Review

Complete 2 credit hours from the following:
ICO-290: Co-op in Industrial Technology
MFMT-192: Power Facilities Practicum
MFMT-196: Power Engineering Independent Study
PEFT-108: Portfolio Development
PEFT-180: Power Heating Plant Lab
PEFT-182: Power Fundamentals Lab
PEFT-184: Power Systems Operation and Maintenance Lab
PEFT-297: Special Topics in Power/Building Engineering, Commercial/Industrial Energy
PEFT-298: Special Topics In Power/Building Engineering, Commercial/Industrial Energy

Minimum Credit Hours: 21.0

Minimum Number Of Credits To Graduate

62.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn
Wayne State University

Career Opportunities

Students may earn the Energy Technology — Boiler License Review Basic Certificate and the Energy Technology — Power/Building Engineer Advanced Certificate through the course of this degree, which may present career opportunities for students while completing the associate degree.

Energy Technology – Power/Buliding Engineer Advanced

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE

FUTUREDRIVEN

Energy Technology — Power/Building Engineer Advanced

Certificate of Achievement
Program Code: PWRBLDENGAD.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

James Martini • (313) 845-6453 • jmartini@hfcc.edu • Technology Bldg • Room: E-211L

Program Information

Description

Designed for the prospective entry-level power engineer and those seeking educational credentials or licensing in this field. This certificate program provides two distinct study options and is designed to prepare students to enter the power plant operation, building and facilities operation and maintenance, and HVAC commercial-industrial operation and maintenance fields. Students may select this to achieve this certificate in a traditional classroom/lab approach OR an online approach with lab and/or field experiences.

Option A - Traditional Classroom/Lab Approach provides the traditional classroom-lab approach to completing the program and includes "hands-on" lab and field experiences required by some license agencies. All courses from the Phase I - HP Boiler License Prep Program apply toward Option A of this program. Students completing the 34 credits for the program receive a certificate which may be presented to local license agencies to assist in meeting the requirements to take a HP Boiler license exam, NIULPE 4th Class and/or a 3rd Class Refrigeration Operator license exam. In this program students operate boilers, engines, turbines and heating and cooling equipment in the "hands-on" Co-Generation Facility in the Energy Technology Department.

Option B - Online Approach With Lab and/or Field Experiences provides an equivalent approach to completing the program which is up to ninety-five percent online and includes completion of mandatory power engineering "hands-on" labs or documenting field experiences as required by some license agencies. Students completing the 34 credits for the program receive a certificate which (if it includes the required level of "hands-on" lab training and/or field experiences) may be presented to local license agencies to assist in meeting the requirements to take a HP Boiler license exam, NIULPE 4th Class and/or a 3rd Class Refrigeration Operator license exam.

Learning Outcomes

- Solve basic math and science problems found within power building engineering.

- Demonstrate technical communication ability including reading and interpreting reports, diagrams, and manufacturer specifications and writing work orders, logs, etc.

- Apply safe workplace procedures including use of safety equipment in laboratory and field conditions.

- Maintain electrical systems in residential, commercial, and industrial facilities.

- Maintain mechanical systems in residential, commercial, and industrial facilities.

- Maintain HVAC equipment in residential, commercial, and industrial settings.

- Maintain automated building control systems.

- Create work plans to complete building exterior and landscape maintenance.

- Create work plans to complete building interior and custodial maintenance.

- Maintain combustion equipment including equipment associated with ash handling, fans and draft control, and pollution control.

- Maintain water handling and water treatment equipment.

Degree Specific Requirements

REQUIRED CORE COURSES

ENT-100: Basic Workplace Skills
ENT-101: Introduction to Energy Technology
ENT-103: AC and DC Electricity
ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
ENT-141: Power Engineering I Energy Conversion Fundamentals
ENT-145: Power Engineering II Boilers and Auxiliaries
ENT-256: Power Engineering III Steam Plant Systems-Equipment
ENT-259: Power Engineering IV - Plant/Building Operations and Maintenance
MFMT-224: Automated Control Systems 1
PEFT-112: Technical Communication-Power

Complete 6 credit hours from the following courses:
ENT-212: Commercial Heating
ENT-216: Light Commercial Refrigeration
ENT-219: RACH Light Commercial Systems
MFMT-241: Power Engineering/Refrigeration License Review
MFMT-248: Power Engineering - Steam License Review

Complete 2 credit hours from the following courses:
ICO-290: Co-op in Industrial Technology
MFMT-192: Power Facilities Practicum
MFMT-196: Power Engineering Independent Study
PEFT-108: Portfolio Development
PEFT-180: Power Heating Plant Lab
PEFT-182: Power Fundamentals Lab
PEFT-184: Power Systems Operation and Maintenance Lab

Minimum Credit Hours: 32.0

Energy Technology – Power/Buliding Engineer Advanced

CERTIFICATE OF ACHIEVEMENT

REQUIRED SUPPORT COURSES

MFMT-101: Energy Technology Applications
MFMT-114: Energy Conversion Principles, Tools, Instruments, and Processes
MFMT-224: Automated Control Systems 1
PEFT-112: Technical Communication-Power
PEFT-143: Power Engineering Boilers
PEFT-246: Steam Plant Prime Movers
PEFT-247: Combined and Cogeneration Power Plants

Complete one of the following courses:
MFMT-116: High Pressure Boiler-3rd Class License Preparation
MFMT-241: Power Engineering/Refrigeration License Review
MFMT-248: Power Engineering - Steam License Review

Complete 5 credit hours from the following courses:
ICO-290: Co-op in Industrial Technology
MFMT-192: Power Facilities Practicum
MFMT-196: Power Engineering Independent Study
PEFT-108: Portfolio Development
PEFT-180: Power Heating Plant Lab
PEFT-182: Power Fundamentals Lab
PEFT-184: Power Systems Operation and Maintenance Lab

Minimum Credit Hours: 24.0

Minimum Number Of Credits To Graduate

24.0 (Including Options/Electives)

Additional Program Requirements

Transfer from one Option to an another Option

Full-time or part-time students must meet with the Power/Building Engineering faculty advisor or, online students must correspond with the Power/Building Engineering faculty advisor prior to registration to develop an approved plan of work for the program. Any changes from the original Plan of Work for a student"s program MUST be approved by a Power Engineering Faculty member BEFORE a change in class enrollment takes place! Specific requirements regarding switching options are as follows:

Option A students may at any time (with an approved plan of work) change to an Option B mode of study usually without significant makeup courses due to the fact that "hands-on" labs-experiences are included with the courses in this option.

Option B students requesting to switch to Option A MUST first establish an approved plan of work with a Power Engineering faculty member BEFORE enrolling in any courses included in the Option A program. Additional "hands-on" experiences may need to be added to the student"s program to meet the Option A program lab and experience requirements for completion of that option.

Program Duration Limits / Updates / Changes

This certificate is a one year, four semester program. Students attend a fall and winter semester along with two eight-week spring-summer semesters. Entry into the program may be during any one of the four semesters. Students are encouraged to make an early application, at least one month or earlier, before either a fall or winter semester and to seek advising and counseling prior to entry. Full time or part time students must meet with the Power/Building Engineering faculty advisor or, online students must correspond with the Power/Building Engineering faculty advisor prior to registration to develop an approved plan of work for the program.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Students completing this certificate may have the knowledge to take the NIULPE (National Institute for the Uniform Licensing of Power Engineers) 4th Class License Exam (when approved by the individual state board), and the 3rd, 2nd, 1st or Chief Engineers License Exams on campus or through any one of the 20 + state licensing boards for NIULPE, or if they have the required years of field experience for a specific power engineer license.

Students completing this certificate may also have the knowledge to take the EPA Refrigerant Recovery Exam, and the Refrigeration portions of the NIULPE (National Institute for the Uniform Licensing of Power Engineers) 4th Class License Exam (when approved by the individual state board), 3rd, 2nd, 1st or Chief Engineers License Exams on campus or through any one of the 20 + state licensing boards for NIULPE, if they have the required years of field experience for a specific refrigeration license.

The NIULPE 4th class License Exam and the EPA Refrigerant Recovery Exam are offered as part of this program in ENT 256 (For Option A students) and in PEFT 256 (For Option B Online students who can travel to the campus for the exam session). Students receiving a passing score on these exams will receive certification in these areas.

Career Opportunities

Student successfully completing this program and passing a steam and/or refrigeration license exam may find employment such as:

Building and Facilities Engineers
Operating Engineers
Stationary Engineers
Power Engineers

Service industrial machinery, hospital equipment, plumbing fixtures, elevators, and other electrical or mechanical devices used on the premises.

Monitor Control Room equipment including troubleshooting

Machine/Equipment maintenance and some 'hands-on' repair.

They also handle all aspects of the job; in others, they are assisted by helpers or maintenance personnel.

These employment positions may be found in steam-electric or co-generation generating plants, pumping stations, heating plants, air conditioning plants, water treatment facilities, industrial or commercial refrigeration plants and commercial or industrial process plants and buildings.

Students with power field operating experience may advance in the profession by utilizing this program to seek advanced operating positions, management positions or a higher grade of license.

Students completing Option B of this program may find additional employment positions in the Power/Building Engineer field such as in administration, engineering, marketing or sales, and parts or service.

Employment Outlook

The Projections of Employment, published by the Labor Market Information projects a 10% increase the number of Facilities Engineers and Stationary Engineers through 2012. The trend toward automated, centralized control of building operations has not reduced the need for Power, Building and Facilities Engineers. When automated systems are installed in older buildings, they often take the place of simpler systems and equipment that had not required the high-level services of Power, Facilities and Building Engineers.

This program alone does not qualify a person to take power engineering license exams. However, this program may in some cases offer the capability to gain all of the qualifying educational and/or field experiences toward meeting license exam requirements. Admission to license exams is based upon education and field experience and is granted depending upon each individual's credentials. Check with your employer or the local license agency involved to ensure you will obtain the required experience and/or the educational background necessary for the license you are seeking or the documentation you require to advance in the profession.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Energy Technology –
Renewable Energy Advanced

CERTIFICATE OF ACHIEVEMENT

Energy Technology — Renewable Energy Advanced

Certificate of Achievement
Program Code: RENEWAD.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Gregory Laskowsky • (313) 317-1550 • glaskowsky@hfcc.edu • Technology Bldg • Room: E-115D

Program Information

Description

Introduces individuals to job opportunities in the areas of non-traditional energy efficient power generation, heating and cooling, alternative automotive propulsion, green construction, and energy savings through better usage and design.

Learning Outcomes

- Distinguish the full range of renewable energy technologies and their applications.

- Describe how mechanical components of renewable energy technologies that are economically relevant work (wind, solar PV, solar thermal, batteries, geothermal, small hydropower, fuel cells, alternatively fueled vehicles, and biomass).

- Demonstrate basic principles of electrical repair and installation while employing appropriate safety measures.

- Demonstrate the installation, maintenance, and repair of small wind generators, solar PV, solar thermal hot water systems, basic biomass. combustion systems, and above-ground components of geothermal systems following manufacturer specifications.

- Compare and contrast the environmental impact and economic role of both traditional and alternative energy supplies.

- Perform building energy audits for residential and commercial buildings.

- Perform energy efficient upgrades to building envelopes, HVAC equipment, and controls.

- Describe and apply mechanical, building, plumbing, electrical, and energy codes, standards, local ordinances, and state and federal regulations.

Degree Specific Requirements

REQUIRED CORE COURSES

ENT-103: AC and DC Electricity
ENT-104: Heating Technology
ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
REEN-110: Geothermal Systems and Water Furnace Technology
REEN-120: Wind, Solar, and Fuel Cell Technology

REEN-130: Smart Home Control Technology
REEN-140: Cogeneration and Backup Power

Complete one of the following:
ENT-101: Introduction to Energy Technology
REEN-101: Survey of Renewable Energy Sources

Minimum Credit Hours: 19.0

REQUIRED SUPPORT COURSES

Complete a minimum of 16.0 credit hours from the following courses:
ENT-113: Refrigeration Technology
ENT-124: Construction Blueprint Reading
ENT-216: Light Commercial Refrigeration
ENT-219: RACH Light Commercial Systems
ENT-255: Green Building Certification Preparation
ENT-260: Energy Systems Management
ENT-265: Energy Systems Design
ENT-269: Energy Technology Project Management
REEN-160: Energy Auditing/Weatherization and
REEN-161: Energy Auditing/Weatherization Certification Lab
REEN-170: Battery Technologies
REEN-180: Hydropower

Minimum Credit Hours: 16.0

Minimum Number Of Credits To Graduate

35.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Eastern Michigan University
Siena Heights University
Wayne State University

Career Opportunities

Automotive
Batteries
Biomass
Wind and photovoltaic
Geothermal
Hydrogen fuel cell technology
Hydropower

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Energy Technology - Renewable Energy Basic

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE
FUTUREDRIVEN

Energy Technology — Renewable Energy Basic

Certificate of Achievement
Program Code: RENEWBA.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Gregory Laskowsky • (313) 317-1550 • glaskowsky@hfcc.edu • Technology Bldg • Room: E-115D

Program Information

Description

Provides students with knowledge and current concepts in renewable energy, and applies to students interested in an alternative to the current reliance on fossil fuels.

Learning Outcomes

- Distinguish the full range of renewable energy technologies and their applications.

- Describe how mechanical components of renewable energy technologies that are economically relevant work (wind, solar PV, solar thermal, batteries, geothermal, small hydropower, fuel cells, alternatively fueled vehicles, and biomass).

- Demonstrate basic principles of electrical repair and installation while employing appropriate safety measures.

- Demonstrate the installation, maintenance, and repair of small wind generators, solar PV, solar thermal hot water systems, basic biomass. combustion systems, and above-ground components of geothermal systems following manufacturer specifications.

- Compare and contrast the environmental impact and economic role of both traditional and alternative energy supplies.

- Perform building energy audits for residential and commercial buildings.

- Perform energy efficient upgrades to building envelopes, HVAC equipment, and controls.

- Describe and apply mechanical, building, plumbing, electrical, regulations.

Degree Specific Requirements

REQUIRED CORE COURSES

REEN-101: Survey of Renewable Energy Sources
REEN-110: Geothermal Systems and Water Furnace Technology
REEN-120: Wind, Solar, and Fuel Cell Technology
REEN-130: Smart Home Control Technology
REEN-140: Cogeneration and Backup Power

Minimum Number Of Credits To Graduate

10.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Apprentice
Technician

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Industrial Distribution – Technical Concentration

CERTIFICATE OF ACHIEVEMENT

Industrial Distribution — Technical Concentration

Certificate of Achievement
Program Code: INDSTTEC.CA.

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Miles Jarvis • (313) 317-6502 • mjarvis@hfcc.edu • Technology Bldg • Room: E-164

Program Information

Description

Combines product specification and application with customer service. This program is a rewarding and challenging career for those with both technical aptitude and an interest in sales and can help elevate an industrial distribution career to the next level as a technical representative. Individuals in Industrial Distribution support customers through phone or personal contact, represent manufacturers' new and existing products, provide customer service, and manage inventory and warehouse functions. Currently more starting-level jobs in Industrial Distribution exist than the number of qualified people to fill these jobs. This trend is expected to continue.

Learning Outcomes

- Describe the functional utility of common industrial materials including metals, plastics, ceramics and elastomers and their application.

- Demonstrate the use and function of common industrial hand tools, metal shaping tools, measurement devices, and the elements of precision measurement.

- Compose a technical memorandum concerning a common industrial safety hazard and include safety related procedures.

- Identify and describe common industrial processes utilizing electrical, hydraulic, pneumatic and mechanical energized systems.

- Interpret a part blueprint or drawing in pictorial and orthographic projection views and interpret dimensioning.

- Identify and describe common mechanical power transmission systems and the typical causes of component failure.

Degree Specific Requirements

REQUIRED CORE COURSES

TAFD-120: Industrial Safety Awareness
TAFD-150: Applied Technology
TAMA-110: Industrial Applications of Basic Mathematical Principles
TAMA-120: Industrial Applications of Algebraic Principles
TAMN-100: Shop Tools and Techniques

Complete one of the following courses:
TADV-100: Basic Print Reading
TAGD-110: Basic Shape and Size Interpretation

Complete a minimum of 4 credit hours from the following:*
TAEL-103: DC and AC Electricity
TAFP-150: Introduction to Industrial Hydraulics
TAIM-100: Industrial Materials
TAMT-110: Mechanical Power Transmission
TAMT-200: Predictive Maintenance - Shaft Alignment and Couplings

Minimum Credit Hours: 19.0

*Course prerequisites are to be observed.

Minimum Number Of Credits To Graduate

19.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Business Managers
Buyers
Customer Service Representatives
Inside/Outside Sales Representatives
Inventory/Warehouse Managers
Technical Product Line Specialists
While salaries will vary based on experience and education, compensation is competitive.*
Outside Sales: $40,000-$80,000
Branch Management: $40,000-$70,000
Inside Sales: $28,000-$65,000
Purchasing: $27,000-$60,000
Customer Service: $22,000-$40,000
Warehouse: $21,000-$38,000
*Sources: American Society of Employers; Power Transmission Distributors Association.

To learn more about Industrial Distribution, please visit **www.industrialcareerspathway.org**.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Machine Tool Technology/CNC

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
FUTUREDRIVEN

Machine Tool Technology / CNC

Associate in Applied Science
Program Code: CNC.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Guy Pizzino • (313) 845-6331 • gpizzino@hfcc.edu • Technology Bldg • Room: E-117B

Program Information

Description

Explores advanced precision machining skills utilizing computer numerical controlled (CNC) machining and turning centers, and CAD/CAM software. Course work introduces a variety of metals, usage of various types of cutting tools, precision measuring tools, manual lathes, vertical milling machines, surface grinders, and other shop equipment. Classes are conducted in real world laboratory settings using state-of-the-art equipment.

Learning Outcomes

- Develop knowledge of career opportunities and demonstrate the requisite entry level machining and measurement skills for the manufacturing industry.

- Practice safe work habits in an industrial manufacturing environment.

- Create a basic or complex part on non-computerized industry standard machining and turning equipment.

- Create complete complex parts on computer controlled machining centers.

- Create complete complex parts on computer controlled turning centers.

- Utilize quality control concepts to identify root cause part discrepancies.

- Utilize appropriate technology to solve complex problems through critical analysis in the machining environment.

- Synthesize information using numerical control software to complete three-dimensional parts on computer controlled milling and turning centers.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic & Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, & Society
   SOC-251: Ethnic and Racial Diversity
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete one of the following:
   ENG-131: Introduction to College Writing
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research
   SPC-131: Foundations of Speaking
   CIS-220: Systems Analysis and Design

3. **Computer Technology:**

   Complete one of the following:
   CIS-100: Introduction to Information Technology
   CIS-221: Instructional Technology for Elementary Teachers
   CIS-223: Instructional Technology for Secondary Teachers
   HCS-131: Computers in Health Care
   TAFD-117: Industrial Computer Applications

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   AUTO-135: Mathematics for the Technician
   BMA-110: Business Math
   CHEM-131: Principles of Chemistry
   ENGR-232: Statics
   MATH-100: Basic Technical Mathematics
   MATH-101: Mathematics for Health Careers
   MATH-103: Technical Mathematics
   MATH-104: Mathematics for Food Service Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra

MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations
TAMA-120: Industrial Applications of Algebraic Principles

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

MTT-100: Machine Tool Processes I
MTT-105: Print Reading for Manufacturing
MTT-110: Machine Tool Processes II
MTT-130: Quality Control Gaging and Inspection
MTT-140: Introduction to CNC
MTT-145: CNC Operations
MTT-146: Introduction to Machine Tool Probing
MTT-147: Basic Macro Programming for CNC
MTT-148: Advanced CNC Probing
MTT-150: Statistical Process Control (SPC) In Manufacturing
MTT-160: Computer Assisted N/C Programming
MTT-170: Advanced Computer Assisted N/C Programming
MTT-275: Advanced CNC Operations

Minimum Credit Hours: 37.0

REQUIRED SUPPORT COURSES

CIS-125: Principles of Programming Logic
DRAF-110: Introduction to Industrial Drafting
DRAF-120: Introduction to CAD

Minimum Credit Hours: 11.0

Minimum Number Of Credits To Graduate

63.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn

Career Opportunities

Automation and Control Technician
CNC Set-up Technician
Engineering Technician
Quality Controller
Programmer
Laboratory Technician
Tool Analyst
Pre-production Planner
Plastic R & D Technician
Machinist/Toolmaker
Sales & Service Engineer
Process Engineer
Test Technician

Manufacturing Production Specialist

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE
FUTUREDRIVEN

Manufacturing Production Specialist

Certificate of Achievement
Program Code: MPSPEC.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Joseph Skupin • jskupin@hfcc.edu • Technology Bldg • Room: E-172

Program Information

Description

Provides foundation skills and experiences in manufacturing processes and systems, develops an awareness of manufacturing systems and technologies, and creates a level of technological literacy essential for today's advanced manufacturing operations. The Basic Manufacturing Production Specialist certificate provides the educational essentials for working at the production level in Advanced Manufacturing and leads to the Mechatronic Manufacturing Associate in Applied Science Degree.

Learning Outcomes

- Demonstrate an understanding of the mathematical functions specific to their trade.
- Demonstrate an understanding of the occupational health and safety requirements relative to the workplace in general and specific to their trades.
- Demonstrate an understanding of basic industrial computer applications in the general workplace and specific to their trades.
- Demonstrate an understanding of the application of graphic design relative to the general workplace and specific to their trades.
- Demonstrate an understanding of job skills specific to their trades.
- Demonstrate an understanding of the following essential knowl edge and skills: troubleshooting, measurement, communication, use of hand tools, use of personal protection equipment, graphic interpretation, and problem solving.

ADMISSION REQUIREMENTS / ELIGIBILITY

High school diploma or GED

ASSET Reading score of 48 or better OR a COMPASS Reading score of 51 or better and a Writing score of 78 or better by the end of the first semester

ASSET or COMPASS Writing score sufficient for placement in ENG 131 by the beginning of the second semester. These requirements may also be fulfilled by successful completion of developmental English course

Successful completion of TAMA 110 or MATH 101 with a grade of C or better

Degree Specific Requirements

REQUIRED CORE COURSES

TADV-100: Basic Print Reading
TAFD-117: Industrial Computer Applications
TAFD-120: Industrial Safety Awareness
TAFD-150: Applied Technology
TAMA-110: Industrial Applications of Basic Mathematical Principles
TAMA-120: Industrial Applications of Algebraic Principles

Minimum Number Of Credits To Graduate

14.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Manufacturing Trades

ASSOCIATE IN APPLIED SCIENCE

Manufacturing Trades

Associate in Applied Science
Program Code: MFGTD.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Joseph Skupin • jskupin@hfcc.edu • Technology Bldg • Room: E-172

Program Information

Description

Provides the related trades instructional classes for registered Department of Labor and other industrial apprentices involved in the manufacturing technologies of transportation based manufacturing. Apprentices in these skilled trade classifications take courses defined by their employer or joint apprentice committee. They also must complete the on-the-job hours of work and skills certification to qualify for journey-person certification or the equivalent. Apprentice certificate educational programs are typically 38 credit hours or longer in duration. Apprentice or Journeymen students may also be eligible to apply credits earned in their trade's educational programs toward the 60 credit hours required for the degree.

Learning Outcomes

- Demonstrate an understanding of the mathematical functions specific to their trade.

- Demonstrate an understanding of the occupational health and safety requirements relative to the workplace in general and specific to their trade.

- Demonstrate an understanding of basic industrial computer applications in the general workplace and specific to their trade.

- Demonstrate an understanding of the application of graphic design relative to the general workplace and specific to their trade.

- Demonstrate an understanding of the following essential knowl edge and skills: troubleshooting, measurement, communication, use of hand tools, use of personal protective equipment, graphic interpretation, and problem solving.

ADMISSION REQUIREMENTS / ELIGIBILITY

Designed for employer-sponsored industrial apprentices. Admission is restricted to those approved by TAE apprentice coordinator.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total, including at least three credit hours from the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete at least one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete at least one of the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete at least one of the following:
   CIS-100: Introduction to Information Technology
   CIS-221: Instructional Technology for Elementary Teachers
   CIS-223: Instructional Technology for Secondary Teachers
   HCS-131: Computers in Health Care
   TAFD-117: Industrial Computer Applications

4. **Critical Thinking & Information Literacy:**

   Complete at least one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

Complete at least one of the following:
AUTO-135: Mathematics for the Technician
BMA-110: Business Math
CHEM-131: Principles of Chemistry
ENGR-232: Statics
MATH-100: Basic Technical Mathematics
MATH-101: Mathematics for Health Careers
MATH-103: Technical Mathematics
MATH-104: Mathematics for Food Service Careers
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations
TAMA-120: Industrial Applications of Basic Mathematical Principles

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

Apprentice certificate program courses total a minimum of 38 credit hours and are determined by the employer and college requirements.

Coursework is selected by the student, the employer and the TAE apprentice coordinator.

Courses in this program are those that apply to the die design and die repair skills areas, most beginning with the prefix TAGD.

Minimum Credit Hours: 38

ELECTIVE COURSES

Complete additional 100-level or above courses to reach the 60 credits required for Associates in Applied Science degrees.

Maximum Credit Hours Necessary: 7

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn
Wayne State University

Career Opportunities

Tool and Die Journeyman
Tool and Die Repairman
Tool and Die Group Leader
Tool and Die Group Supervision
Skilled Trade Supervision
Tool Engineer
Industrial Service Tool and Die Technician
Product Design Technician
Quality Control Technician
Tool Designer

INDUSTRIAL TECHNOLOGY

Multi-Skilled Manufacturing Maintenance (Mechatronic Manufacturing Maintenance)

ASSOCIATE IN APPLIED SCIENCE

Multi-Skilled Manufacturing Maintenance (Mechatronic Manufacturing Maintenance)

Associate in Applied Science
Program Code: MSMM.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Joseph Skupin • jskupin@hfcc.edu • Technology Bldg • Room: E-172

Program Information

Description

Covers how to develop skills in areas such as industrial electrical, mechanical, robot maintenance, welding, and hydraulics. Course work and laboratory experiences will be provided that support skills in the area of self-directed work teams.

Learning Outcomes

- Demonstrate an understanding of the mathematical functions specific to their trade.
- Demonstrate an understanding of the occupational health and safety requirements relative to the workplace in general and specific to their trades.
- Demonstrate an understanding of basic industrial computer applications in the general workplace and specific to their trades.
- Demonstrate an understanding of the application of graphic design relative to the general workplace and specific to their trades.
- Demonstrate an understanding of job skills specific to their trades.
- Demonstrate an understanding of the following essential knowl edge and skills: troubleshooting, measurement, communication, use of hand tools, use of personal protection equipment, graphic interpretation, and problem solving.

ADMISSION REQUIREMENTS / ELIGIBILITY

High school diploma or GED

ASSET Reading score 48 or better OR COMPASS Reading score of 51 to 83 and a Writing score between 78 to 99 by the end of the first semester

ASSET or COMPASS Writing test score sufficient for placement in ENG-131 by the beginning of the second semester These requirements may also be fulfilled by successful completion of developmental English courses.

Successful completion of TAMA-110 or MATH-100 with a C grade or better

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration pur-poses. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are complet-ing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete at least one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

   Complete at least one of the following:
   ENG-131: Introduction to College Writing
   ENG-132: College Writing and Research
   SPC-131: Fundamentals of Speaking
   CIS-220: Systems Analysis and Design

3. **Computer Technology:**

   Complete:
   TAFD-117: Industrial Computer Applications

4. **Critical Thinking & Information Literacy:**

   Complete at least one of the following:
   ENG-135: Business and Technical Writing and Research
   WR-131: Religious Traditions in the World

5. **Quantitative Literacy:**

   Complete at least one of the following:
   AUTO-135: Mathematics for the Technician
   BMA-110: Business Math

Multi-Skilled Manufacturing Maintenance (Mechatronic Manufacturing Maintenance)

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

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CHEM-131: Principles of Chemistry
ENGR-232: Statics
MATH-100: Basic Technical Mathematics
MATH-101: Mathematics for Health Careers
MATH-103: Technical Mathematics
MATH-104: Mathematics for Food Service Careers
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations
TAMA-120: Industrial Applications of Basic Mathematical Principles

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

TADV-100: Basic Print Reading
TAEL-103: DC and AC Electricity
TAFD-120: Industrial Safety Awareness
TAFD-150: Applied Technology
TAFP-150: Introduction to Industrial Hydraulics
TAMA-110: Industrial Applications of Basic Mathematical Principles
TAMA-120: Industrial Applications of Algebraic Principles
TAIM-100: Industrial Materials

Minimum Credit Hours: 23.0

REQUIRED SUPPORT COURSES

A minimum of 15 credit hours from the following courses after completing a planning session with the TAE apprentice coordinator.

Electrical: Complete at least one of the following:
TAEL-105: AC Theory and Equipment
TAEL-145: DC and AC Motors
TAEL-150: DC Motors and Controls
TAEL-200: Ladder Diagrams and Motor Controls
TAEL-245: Programmable Logic Controller (PLC)

Mechanical: Complete at least one of the following:
TAGD-110: Basic Shape and Size Interpretation
TAGD-120: Advanced Graphic Interpretation
TAGD-130: Assembly Detailing
TAMT-110: Mechanical Power Transmission
TAMT-115: Maintenance Trades Print Reading
TAMT-200: Predictive Maintenance - Shaft Alignment and Couplings
TAMT-210: Predictive Maintenance-Vibration Analysis
TAMT-220: Advanced Rigging
TAMT-260: Gearing

Fluid Power: Complete at least one of the following:
TAFP-160: Pneumatic Power and Control
TAFP-270: Fluid Power Systems: Circuit Design and Troubleshooting
TAPP-100: Fundamentals of Plumbing and Pipefitting
TAPP-120: Heating Systems
TAPP-250: Plumbing Code

Welding: Complete at least 4 credit hours from the following courses:
CIMWD-100: Weld Joint Design and Preparation (Safety/Joint Design)
CIMWD-101: Weld Joint Design and Preparation (Welding Code, Weld Measurement, and Hand Tools)
CIMWD-102: Weld Joint Design and Preparation (Material Cutting, Grinding, and Fabrication)
CIMWD-110: Shielded Metal Arc Welding (Flat and Horizontal Welding)
CIMWD-111: Shielded Metal Arc Welding (Vertical Welding)
CIMWD-120: Gas Tungsten Arc Welding (Safety and Technology)
CIMWD-121: Gas Tungsten Arc Welding (Steel and Stainless Steel-Flat and Horizontal Welding)
CIMWD-122: Gas Tungsten Arc Welding (Steel and Stainless Steel Vertical)
CIMWD-123: Gas Tungsten Arc Welding (Aluminum)
CIMWD-130: Gas Metal Arc Welding (Flat and Horizontal)
CIMWD-131: Gas Metal Arc Welding (Vertical and Overhead Welding)
CIMWD-210: Pipe Welding (2G and 5G Welding)
CIMWD-211: Pipe Welding (6G Welding)
CIMWD-230: Shielded Metal Arc Welding AWS Certification (Preparation and Practice)
CIMWD-231: Shielded Metal Arc Welding AWS Certification (Practical)
CIMWD-240: Gas Tungsten Arc Welding AWS Certification (Preparation and Practice)
CIMWD-241: Gas Tungsten Arc Welding AWS Certification (Practical)

Minimum Credit Hours: 15.0

ELECTIVE COURSES

Complete as many electives credits as necessary to receive your Associate degree.

Minimum Credit Hours: 7.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

INDUSTRIAL TECHNOLOGY

Multi-Skilled Manufacturing Maintenance (Mechatronic Manufacturing Maintenance)

ASSOCIATE IN APPLIED SCIENCE

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Plant Maintenance Trades

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
FUTUREDRIVEN

Plant Maintenance Trades

Associate in Applied Science
Program Code: PLMTT.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Joseph Skupin • jskupin@hfcc.edu • Technology Bldg • Room: E-172

Program Information

Description

Provides the related trades instructional classes for registered Department of Labor and other industrial apprentices involved in the maintenance of manufacturing systems. Apprentices in these skilled trade classifications take courses defined by their employer or joint apprentice committee. They also must complete on-the-job hours of work and skills certification to qualify for a journeyman's certification or the equivalent. Apprentice certificate educational programs are typically 38 credit hours or longer in duration. Apprentice or journeyman students may also be eligible to apply credits earned in their trade's educational program toward the 60 credit hours required for the degree. Additional licensing test preparation is also available for specific trades such as the State of Michigan licensing for electricians.

Learning Outcomes

- Demonstrate an understanding of the mathematical functions specific to their trade.
- Demonstrate an understanding of the occupational health and s afety requirements relative to the workplace in general and specific to their trade.
- Demonstrate an understanding of basic industrial computer applications in the general workplace and specific to their trade.
- Demonstrate an understanding of the application of graphic design relative to the general workplace and specific to their trade.
- Demonstrate an understanding of the following essential knowl edge and skills: troubleshooting, measurement, communication, use of hand tools, use of personal protective equipment, graphic interpretation, and problem solving.

Admission Requirements / Eligibility

Designed for employer-sponsored industrial apprentices. Admission is restricted to those approved by TAE apprentice coordinator.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Culture:**

    Complete at least one of the following:
    EDU-260: History and Civics in Elementary Schools
    GEOG-132: World Regional Geography
    HIST-151: American History I
    HIST-152: American History II
    POLS-131: Introduction to American Government and Political Science
    SOC-131: Introduction to Sociology

2. **Communication:**

    Complete at least one of the following:
    ENG-131: Introduction to College Writing
    SPC 131: Foundations of Speaking

3. **Computer Technology:**

    Complete at least one of the following:
    CIS-100: Introduction to Information Technology
    CIS-221: Instructional Technology for Elementary Teachers
    CIS-223: Instructional Technology for Secondary Teachers
    TAFD 117: Industrial Computer Applications

4. **Critical Thinking and Information Literacy:**

    Complete at least one of the following:
    ENG-132: College Writing and Research
    ENG-135: Business and Technical Writing and Research
    WR-131: Religious Traditions in the World

5. **Quantitative Literacy:**

    Complete at least one of the following:
    AUTO-135: Mathematics for the Technician
    BMA-110: Business Math
    CHEM-131: Principles of Chemistry
    ENGR-232: Statics
    MATH-100: Basic Technical Mathematics
    MATH-101: Mathematics for Health Careers

Plant Maintenance Trades

ASSOCIATE IN APPLIED SCIENCE

MATH-103: Technical Mathematics
MATH-104: Mathematics for Food Service Careers
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations
TAMA-120: Industrial Applications of Basic Mathematical Principles

NOTE:
For this program, General Education minimum credits: 15

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

Apprentice certificate program courses total a minimum of 38 credit hours and are determined by the employer and college requirements.

Coursework is selected by the student, the employer and the TAE apprentice coordinator.

Courses in this program are those that apply to industrial electrical (TAEL prefix), industrial mechanical (TAMT prefix), hydraulics and pneumatics (TAFP prefix), welding (CIMWD prefix), plumbing (TAPP prefix), instrumentation (TAPI prefix), and foundations (TAFD and TAMA prefixes).

Minimum Credit Hours: 38

ELECTIVE COURSES

Complete additional 100-level or above courses to reach the 60 credits required for the Associate in Applied Science degrees.

Maximum Credit Hours Necessary: 7

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Ferris State University
Lawrence Technological University
Siena Heights University
University of Michigan - Dearborn
Wayne State University

Career Opportunities

Industrial Electrician
Industrial Machine Repair
Industrial Millwright
Industrial Pipefitter
Industrial Welder
Maintenance Group Leader
Maintenance Supervision
Skilled Trade Supervision
Industrial Service Technician
Product Design Technician
Quality Control Technician

Process Technology

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
FUTUREDRIVEN

Process Technology

Associate in Applied Science
Program Code: PROTECH.AAS

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Joseph Skupin • jskupin@hfcc.edu • Technology Bldg • Room: E-172

Program Information

Description

Prepares students for a career in process technology. A process technician/operator is a key member of a team of people responsible for planning, analyzing, and controlling the production of products from the acquisition of raw materials through the production and distribution of products to customers in a variety of process industries. These industries include, but are not limited to, chemical, food and beverage, oil exploration and production, pharmaceuticals, power generation, pulp and paper, refining and waste water treatment. This program assists students in developing skills necessary for being an effective technician/operator, such as working effectively in a team-based environment, strong oral and written communication, maintaining a safe work environment, controlling, monitoring and troubleshooting equipment, analyzing, evaluating and communicating about data, and training others.

Learning Outcomes

- Demonstrate a working knowledge of Process Industry-based manufacturing systems with a focus on process technology operations using a systems perspective and process safety management.

- Demonstrate standard principles and practices of the commonly utilized equipment in the Process Industry. This includes their purpose, component types, operation, and the Process Technician's role in terms of operating and troubleshooting.

- Identify and describe process equipment related to basic systems, describe the purpose and function of specific process systems, explain how factors affecting process systems are controlled under normal conditions, and recognize abnormal process conditions.

- Identify and apply the common terms and symbols used in algebra as they relate to the Process Industry and solve practical application problems requiring the use of industrial formulas and equations.

- Define and apply the concepts of mass, force, motion, work, energy, and power and identify their practical applications in the workplace, identify the practical applications of reactions involving oxidation and reduction, and have a working knowledge of the chemistry of the environment, including air pollution, the chemistry of trace metals, hazardous waste in the ground and water, and radioactive wastes as they relate to the Process Industry.

- Demonstrate a working knowledge of the basic refinery and process plant operations, basic operating and maintenance procedures, basic equipment, systems, and instrumentation found in the process technology environment.

- Demonstrate standard principles and practices associated with the fundamental principles and laws governing general chemistry, recognize the symbols of elements and differentiate between elements, compounds and mixtures; demonstrate proficiency in using the periodic table as a tool to make predictions; recognizing patterns and locating information about atoms, and apply principles of safety rules and demonstrate knowledge of the use of common laboratory and safety equipment.

- Demonstrate standard principles and practices associated with the fundamental principles and laws governing general physics and the concepts of mass, force, motion, energy, work, and power; be able to identify their practical applications in the workplace; and be able to apply the concepts of mass, force, motion, energy, work, and power to the six basic machines.

- Describe the history of the Quality Movement in the United States and in the Process Industry today. Describe the impact of Quality on an organization's economic performance. Understand the essential elements, function and tools of effective team membership. Use continuous improvement methods to optimize processes and implement problem solving and decision making techniques.

- Describe and demonstrate a basic level of proficiency with the manipulation of the commonly used devices and equipment associated with instrumentation: pressure, pressure instruments, temperature and temperature instruments, level and level instruments, flow and flow measurement instruments, and analytical instruments. Be able to describe the major process variables controlled in the Process Industry.

- Apply Science, Technology, Engineering, and Mathematics (STEM) related principles, tools, and applications to process industry-based manufacturing.

- Apply the foundations and principles of Process Industry-based manufacturing to new and renewable (green) forms of energy, i.e. bio-diesel and wind-farm operations.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

INDUSTRIAL TECHNOLOGY

Process Technology

ASSOCIATE IN APPLIED SCIENCE

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Culture:**

   Complete at least one of the following:
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**

   Complete at least one of the following:
   ENG-131: Introduction to College Writing
   SPC 131: Foundations of Speaking

3. **Computer Technology:**

   Complete at least one of the following:
   CIS-100: Introduction to Information Technology
   CIS-221: Instructional Technology for Elementary Teachers
   CIS-223: Instructional Technology for Secondary Teachers
   TAFD 117: Industrial Computer Applications

4. **Critical Thinking and Information Literacy:**

   Complete at least one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research
   WR-131: Religious Traditions in the World

5. **Quantitative Literacy:**

   Complete the following:
   CHEM-131: Principles of Chemistry
   TAMA-120: Industrial Applications of Algebraic Principles

NOTE:
For this program, General Education minimum credits: 19

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

TAFD-125: Industrial Safety Awareness with First Aid
TAFD-126: Process Industry Health, Environment, and Safety
TAPT-100: Introduction to Process Technology Practices
TAPT-110: Process Technology Equipment
TAPT-120: Introduction to Process Instrumentation
TAPT-125: Process Technology Instrumentation II
TAPT-130: Process Technology Systems
TAPT-140: Process Technology Quality

Minimum Credit Hours: 26.0

REQUIRED SUPPORT COURSES

ENT-141: Power Engineering I Energy Conversion Fundamentals
ENT-145: Power Engineering II Boilers and Auxiliaries
TAMA-110: Industrial Applications of Basic Mathematical Principles

Complete 6 or more credit hours from one of the following areas of concentration:

Industrial Maintenance:
TAEL-103: DC and AC Electricity
TAFP-150: Introduction to Industrial Hydraulics
TAFP-160: Pneumatic Power and Control
TAMT-110: Mechanical Power Transmission
TAMT-115: Maintenance Trades Print Reading
TAMT-200: Predictive Maintenance - Shaft Alignment and Couplings
TAMT-210: Predictive Maintenance-Vibration Analysis

Energy Technology
ENT-103: AC and DC Electricity
ENT-104: Heating Technology
ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)
ENT-108: Introduction to Heating and Cooling Codes
ENT-113: Refrigeration Technology
ENT-119: Air Conditioning Technology

Power Engineering Facilities Technology
PEFT-180: Power Heating Plant Lab
PEFT-182: Power Fundamentals Lab
PEFT-184: Power Systems Operation and Maintenance Lab

Minimum Credit Hours: 14.0

ELECTIVE COURSES

Complete additional 100-level or above courses to reach the 60 credits required for the Associate in Applied Science degrees.

Maximum Credit Hours Necessary: 1

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Process Technology

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

FUTUREDRIVEN

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Job Forecast Data:

Process technicians/operators will be in demand more than ever in the coming years. A shortage of process technicians/operators currently exists within the chemical, oil and gas exploration and production and power generation industries.

Chemical Sector:

The chemical process industry represents a large diversity of industries:

Plastics Materials and Synthetics
Cleaning Preparations
Industrial Organic Chemicals
Industrial Inorganic Chemicals
Miscellaneous Chemicals
Paints and Allied Products
Agricultural Chemicals
Drug Manufacturing

Oil and Gas Production Sector:

Qualified process technicians will be needed to meet demands for projects in production. For example, BP, the second largest oil company in the world, estimates that an additional 200 people will be needed (based on 2002 projections) to staff new deep-water projects in the Gulf of Mexico.

Process Technology — Advanced

Certificate of Achievement
Program Code: PROTECHAD.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Joseph Skupin • jskupin@hfcc.edu • Technology Bldg • Room: E-172

Program Information

Description

Prepares students who are successful to understand, operate, shut down, analyze, and troubleshoot industrial processes in fields such as refining, petrochemical, power generation, oil and gas production, food, metals, minerals, and others. Course work offers the opportunity to increase technical knowledge and skills in areas such as operating equipment, instrumentation and process systems, troubleshooting, and computer applications.

Fuel, energy, water, and chemical companies throughout Michigan are interested in process industry technicians. Technicians check and manage the processes that make a product, working with engineers, chemists, and other professionals as a team member. Work may be conducted in a lab setting or in all types of weather and places in scheduled shift work.

In this career, you will:

> Maintain a safe work place.
> Install, operate, and troubleshoot industrial machines and equipment.
> Develop, analyze, and implement procedures.
> Work with vendors and raw material suppliers.
> Prepare manuals and flow charts.

Learning Outcomes

- Demonstrate a working knowledge of Process Industry-based manufacturing systems with a focus on process technology operations using a systems perspective and process safety management.

- Demonstrate standard principles and practices of the commonly utilized equipment in the Process Industry. This includes their purpose, component types, operation, and the Process Technician's role in terms of operating and troubleshooting.

- Identify and describe process equipment related to basic systems, describe the purpose and function of specific process systems, explain how factors affecting process systems are controlled under normal conditions, and recognize abnormal process conditions.

- Identify and apply the common terms and symbols used in algebra as they relate to the Process Industry and solve practical application problems requiring the use of industrial formulas and equations.

- Define and apply the concepts of mass, force, motion, work, energy, and power and identify their practical applications in the workplace, identify the practical applications of reactions involving oxidation and reduction, and have a working knowledge of the chemistry of the environment, including air pollution, the chemistry of trace metals, hazardous waste in the ground and water, and radioactive wastes as they relate to the Process Industry.

- Demonstrate a working knowledge of the basic refinery and process plant operations, basic operating and maintenance procedures, basic equipment, systems, and instrumentation found in the process technology environment.

- Demonstrate standard principles and practices associated with the fundamental principles and laws governing general chemistry, recognize the symbols of elements and differentiate between elements, compounds and mixtures; demonstrate proficiency in using the periodic table as a tool to make predictions; recognizing patterns and locating information about atoms, and apply principles of safety rules and demonstrate knowledge of the use of common laboratory and safety equipment.

- Demonstrate standard principles and practices associated with the fundamental principles and laws governing general physics and the concepts of mass, force, motion, energy, work, and power; be able to identify their practical applications in the workplace; and be able to apply the concepts of mass, force, motion, energy, work, and power to the six basic machines.

- Describe and demonstrate a basic level of proficiency with the manipulation of the commonly used devices and equipment associated with instrumentation: pressure, pressure instruments, temperature and temperature instruments, level and level instruments, flow and flow measurement instruments, and analytical instruments. Be able to describe the major process variables controlled in the Process Industry.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. For this program:

1. **Civil Society and Culture:**
   No courses required for this Certificate.

2. **Communication:**
   Complete:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete:
   TAFD 117: Industrial Computer Applications

4. **Critical Thinking and Information Literacy:**
   No courses required for this Certificate.

5. **Quantitative Literacy:**
   Complete:
   CHEM-131: Principles of Chemistry

NOTE:
For this program, General Education minimum credits: 10

Process Technology – Advanced

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE
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REQUIRED CORE COURSES

ENT-141: Power Engineering I Energy Conversion Fundamentals
ENT-145: Power Engineering II Boilers and Auxiliaries
TAFD-125: Industrial Safety Awareness with First Aid
TAFD-126: Process Industry Health, Environment, and Safety
TAMA-110: Industrial Applications of Basic Mathematical Principles
TAMA-120: Industrial Applications of Algebraic Principles
TAPT-100: Introduction to Process Technology Practices
TAPT-110: Process Technology Equipment
TAPT-120: Introduction to Process Instrumentation
TAPT-125: Process Technology Instrumentation II
TAPT-130: Process Technology Systems
TAPT-140: Process Technology Quality

Minimum Credit Hours: 37.0

Minimum Number Of Credits To Graduate

47.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Henry Ford College is working in partnership with the Detroit Regional Chamber and Michigan Works! agencies as part of its mission to provide skilled and qualified workers for Michigan's manufacturing industries. HFC is a member of the Southeast Michigan Community College Consortium, nine community colleges sharing resources and developing mutual educational solutions to support the region's economic development.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Process Technology — Basic

Certificate of Achievement
Program Code: PROTECHBA.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Joseph Skupin • jskupin@hfcc.edu • Technology Bldg • Room: E-172

Program Information

Description

Prepares successful students to understand, operate, shut down, analyze, and troubleshoot industrial processes in fields such as: refining, petrochemical, power generation, oil and gas production, food, metals, minerals and others. Covers process technology and process instrumentation, and includes courses in industrial safety awareness and basic math principles for industrial applications. Course work also offers individuals the opportunity to gain technical knowledge and skills in areas such as operating equipment, instrumentation and process systems, troubleshooting, and computer applications. The courses taken in this certificate program can be applied to the Process Technology – Advanced Certificate and the Associate in Applied Science degree.

Learning Outcomes

- Demonstrate a working knowledge of Process Industry-based manufacturing systems with a focus on process technology operations using a systems perspective and process safety management.

- Demonstrate standard principles and practices of the commonly utilized equipment in the Process Industry. This includes their purpose, component types, operation, and the Process Technician's role in terms of operating and troubleshooting.

- Identify and describe process equipment related to basic systems, describe the purpose and function of specific process systems, explain how factors affecting process systems are controlled under normal conditions, and recognize abnormal process conditions.

- Identify and apply the common terms and symbols used in algebra as they relate to the Process Industry and solve practical application problems requiring the use of industrial formulas and equations.

- Demonstrate a working knowledge of the basic refinery and process plant operations, basic operating and maintenance procedures, basic equipment, systems, and instrumentation found in the process technology environment.

- Demonstrate standard principles and practices associated with the fundamental principles and laws governing general chemistry, recognize the symbols of elements and differentiate between elements, compounds and mixtures; demonstrate proficiency in using the periodic table as a tool to make predictions; recognizing patterns and locating information about atoms, and apply principles of safety rules and demonstrate knowledge of the use of common laboratory and safety equipment.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. For this program:

1. **Civil Society and Culture:**
   No courses required for this Certificate.

2. **Communication:**
   Complete:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   No courses required for this Certificate.

4. **Critical Thinking and Information Literacy:**
   No courses required for this Certificate.

5. **Quantitative Literacy:**
   No courses required for this Certificate.

NOTE:
For this program, General Education minimum credits: 3

REQUIRED CORE COURSES

ENT-141: Power Engineering I Energy Conversion Fundamentals
TAFD-125: Industrial Safety Awareness with First Aid
TAMA-110: Industrial Applications of Basic Mathematical Principles
TAPT-100: Introduction to Process Technology Practices
TAPT-120: Introduction to Process Instrumentation

Minimum Credit Hours: 13.0

Minimum Number Of Credits To Graduate

16.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

INDUSTRIAL TECHNOLOGY

Welding Technology

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE

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Welding Technology

Associate in Applied Science
Program Code: WELDINGTECH.AAS

Contact

Industrial Technology Division • (313) 845-9656 •
technology@hfcc.edu • Technology Bldg • Room: E-172

Kevin Ridge • (313) 317-4136 • karidge@hfcc.edu •
Technology Bldg • Room: E-160

Program Information

Description

Prepares students for a career as a welder in the areas of maintenance, construction, manufacturing, or to further their education toward a four year degree program. Emphasizes the development of real, hands-on welding, layout, and fitting skills with extensive exposure to welding principles and practices. In addition to covering SMAW, GMAW, and GTAW welding processes, course work also examines how to operate the plasma arc cutting and oxy/fuel cutting processes, and exposes students to the areas of metallurgy and weld inspection procedures.

Learning Outcomes

- Analyze cutting and welding processes to identify and apply appropriate safe work practices.

- Communicate effectively within the industrial welding profession.

- Recognize, set-up, and operate hand and power tools common to the welding and fabricating trades.

- Interpret industrial 2-D and 3-D drawings and symbology.

- Operate electrical and thermal cutting processes.

- Set-up and perform welding operations with the appropriate process on various metals in different situations.

- Analyze, in relation to specific welding processes, welding flaws, weld integrity, and appearance.

- Develop and analyze weld test results using the American Welding Society's (AWS) standard test procedures.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Culture:**
   Complete the following:
   SOC-131: Introduction to Sociology

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete the following:
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete the following:
   MATH-100: Basic Technical Mathematics

NOTE:
For this program, General Education minimum total: 16

Welding Technology

ASSOCIATE IN APPLIED SCIENCE

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

CIMWD-100: Weld Joint Design and Preparation (Safety/Joint Design)
CIMWD-101: Weld Joint Design and Preparation (Welding Code, Weld Measurement, and Hand Tools)
CIMWD-102: Weld Joint Design and Preparation (Material Cutting, Grinding, and Fabrication)
CIMWD-110: Shielded Metal Arc Welding (Flat and Horizontal Welding)
CIMWD-111: Shielded Metal Arc Welding (Vertical Welding)
CIMWD-112: Shielded Metal Arc Welding (Overhead Welding)
CIMWD-120: Gas Tungsten Arc Welding (Safety and Technology)
CIMWD-121: Gas Tungsten Arc Welding (Steel and Stainless Steel-Flat and Horizontal Welding)
CIMWD-122: Gas Tungsten Arc Welding (Steel and Stainless Steel Vertical)
CIMWD-123: Gas Tungsten Arc Welding (Aluminum)
CIMWD-130: Gas Metal Arc Welding (Flat and Horizontal)
CIMWD-131: Gas Metal Arc Welding (Vertical and Overhead Welding)
CIMWD-140: Weld Metallurgy (Ferrous Metals)
CIMWD-141: Weld Metallurgy (Non-Ferrous Metals)
CIMWD-142: Weld Metallurgy (Weld Testing)
CIMWD-210: Pipe Welding (2G and 5G Welding)
CIMWD-211: Pipe Welding (6G Welding)
CIMWD-212: Pipe Welding (Socket and Flange Welding)
CIMWD-220: Tool and Die Welding (Technology)
CIMWD-221: Tool and Die Welding (GTAW)
CIMWD-222: Tool and Die Welding (SMAW)
CIMWD-230: Shielded Metal Arc Welding AWS Certification (Preparation and Practice)
CIMWD-231: Shielded Metal Arc Welding AWS Certification (Practical)
CIMWD-240: Gas Tungsten Arc Welding AWS Certification (Preparation and Practice)
CIMWD-241: Gas Tungsten Arc Welding AWS Certification (Practical)
CIMWD-250: Gas Metal Arc Welding AWS Certification (Preparation and Practice)
CIMWD-251: Gas Metal Arc Welding AWS Certification (Practical)
CIMWD-260: Welding Fabrication Project (Planning and Design)
CIMWD-261: Welding Fabrication Project (Fabricate)
CIMWD-262: Welding Fabrication Project (Assembly)

Minimum Credit Hours: 30.0

REQUIRED SUPPORT COURSES

TAFD-120: Industrial Safety Awareness

Minimum Credit Hours: 2.0

ELECTIVE COURSES

Students must select and complete a track to satisfy their electives:

Electrical Track (17 credits):
CIMEL-100: Intro to Basic Electricity
CIMEL-101: Instruments
CIMEL-102: Control Circuits and Components
CIMEL-103: Solid State Devices
CIMEL-104: Controls and Instrumentation—Fundamentals
CIMEL-105: Sensors and Photoeyes
CIMEL-106: Calibration and Loop Training
CIMEL-107: Final Control Elements
CIMEL-108: Introduction to PLCs
CIMEL-109: PLC Hardware and Software
CIMEL-110: Programming PLCs
CIMEL-111: PLC Communication
CIMEL-112: Introduction to Robotics
CIMEL-113: Programming/Editing Robots
CIMEL-114: Robot Maintenance and PM
CIMEL-115: Error Codes and Troubleshooting
CIMEL-116: Integration of PLCs and Robots

Or

Mechanical Track (14 credits):
CIMTA-102: Hoists and Cranes
CIMTA-103: Rigging Awareness and Fundamentals
CIMTA-106: Basic Mechanical Power Systems
CIMTA-107: Flexible Drives
CIMTA-108: Couplings and Alignment
CIMTA-109: Bearing, Shafts, and Seals
CIMTA-110: Brakes and Clutches
CIMTA-111: Gears and Cams
CIMMT-100: Intro to Machining Operations
CIMMT-101: Measuring and Layout Tools
CIMMT-102: Hand and Power Tools
CIMMT-103: Power Saws and Drill Presses
CIMMT-104: Engine Lathe Operation
CIMMT-105: Vertical Mill Operations

Minimum Credit Hours: 14.0

Minimum Number Of Credits To Graduate

62.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

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Welding Technology

ASSOCIATE IN APPLIED SCIENCE

HENRY FORD COLLEGE
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Occupational Exposure / Risk

Health and safety hazards for being a welder typically fall into one of six general categories as listed below:

Biological: While it depends on the workplace itself, welders do not normally encounter biological hazards.

Chemical: Welding can create fumes which are a complex mixture of metallic oxides, silicates, and fluorides. Fumes are formed when metal or other materials such as flux or solvents are heated above its boiling point and its vapors condense into very fine particles (solid particulates). Welding fumes normally contain oxides of the materials being welded and of the electrodes being used. If the metal has a coating or paint, these too can decompose with the heat and become part of the fumes. Care should be taken when working near these fumes as health effects can be both immediate, or occur at a later time. Welders also often work with and around:

> Flammable and combustible liquids.
> Compressed gases.
> Asbestos.

Ergonomic: Many injuries to welders are the result of strains, sprains and work-related musculoskeletal disorders (WMSDs). Welders often have to:

> Lift or move heavy objects.
> Work in awkward positions for long periods of time.
> Handle and hold heavy welding guns.
> Perform repetitive motions.
> See OSH answers document on welding - ergonomics for more information.

Physical: Welders can be exposed to:

> Excessive noise levels.
> Excessive heat or cold.
> Electromagnetic fields.
> Laser light.
> Radiation.
> Welding arcs and flames can emit intense visible (VIS), ultraviolet (UV) and infrared (IR) radiation. Gamma- or x-rays can be emitted by inspection equipment or welding machines. Skin and eye damage such as welder's eye or cataracts can result to certain types of radiation.

Safety: Welders often have to work:

> At heights.
> In confined spaces.
> Could experience electrical shock or electrocution.

Other safety hazards include:

> Flying particles which can enter the eye or skin.
> Cuts and stabs from sharp metal edges.
> Injury from other equipment (e.g., using power tools such as grinders, chippers, drills, etc.).
> Slips, trips or falls due to location or environment near the job.
> Burns from hot surfaces, flames, sparks, etc.
> Fires from sparks, flames or hot metals (a special situation includes when the surrounding atmosphere becomes oxygen enriched and thus easier to ignite.) Fires may also result from flashbacks or equipment failure. Please note that clothes soiled with oils or grease can burn more easily. In addition, sleeves or cuffs that are folded or rolled up can catch sparks and increase the risk of fire.

Psychological: Work demands and deadlines may contribute to stress felt on the job. In addition, some welders may be required to work shifts or extended work days which can have health effects.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> Ferris State University

Career Opportunities

> Structural Steel Welder
> Pipe Welder
> Maintenance Welder
> Fabricator
> Welding Engineer

INDUSTRIAL TECHNOLOGY

Welding Technology Advanced Certificate

Certificate of Achievement
Program Code: WTAD.CA

Contact

Industrial Technology Division • (313) 845-9656 • technology@hfcc.edu • Technology Bldg • Room: E-172

Kevin Ridge • (313) 317-4136 • karidge@hfcc.edu • Technology Bldg • Room: E-160

Program Information

Description

This certificate will develop the skills necessary for a person to become proficient in specialized areas of welding. They will also be able to choose a process in which to attempt a weldment for certification through the American Welding Society for an additional fee. Students will perform a weld utilizing correct procedures to become a certified welder.

Learning Outcomes

- Analyze cutting and welding processes to identify and apply appropriate safe work practices.

- Communicate effectively within the industrial welding profession.

- Recognize, set-up, and operate hand and power tools common to the welding and fabricating trades.

- Interpret industrial 2-D and 3-D drawings and symbols.

- Operate electrical and thermal cutting processes.

- Set-up and perform welding operations with the appropriate process on various metals in different situations.

- Analyze, in relation to specific welding processes, welding flaws, weld integrity, and appearance.

Degree Specific Requirements

REQUIRED CORE COURSES

CIMWD-100: Weld Joint Design and Preparation (Safety/Joint Design)
CIMWD-101: Weld Joint Design and Preparation (Welding Code, Weld Measurement, and Hand Tools)
CIMWD-102: Weld Joint Design and Preparation (Material Cutting, Grinding, and Fabrication)
CIMWD-110: Shielded Metal Arc Welding (Flat and Horizontal Welding)
CIMWD-111: Shielded Metal Arc Welding (Vertical Welding)
CIMWD-112: Shielded Metal Arc Welding (Overhead Welding)
CIMWD-120: Gas Tungsten Arc Welding (Safety and Technology)
CIMWD-121: Gas Tungsten Arc Welding (Steel and Stainless Steel-Flat and Horizontal Welding)
CIMWD-122: Gas Tungsten Arc Welding (Steel and Stainless Steel Vertical)
CIMWD-123: Gas Tungsten Arc Welding (Aluminum)
CIMWD-130: Gas Metal Arc Welding (Flat and Horizontal)
CIMWD-131: Gas Metal Arc Welding (Vertical and Overhead Welding)

CIMWD-140: Weld Metallurgy (Ferrous Metals)
CIMWD-141: Weld Metallurgy (Non-Ferrous Metals)
CIMWD-142: Weld Metallurgy (Weld Testing)
CIMWD-210: Pipe Welding (2G and 5G Welding)
CIMWD-211: Pipe Welding (6G Welding)
CIMWD-212: Pipe Welding (Socket and Flange Welding)
CIMWD-220: Tool and Die Welding (Technology)
CIMWD-221: Tool and Die Welding (GTAW)
CIMWD-222: Tool and Die Welding (SMAW)

Complete one of the following Welding AWS Certification options:
Shielded Metal Arc Welding
CIMWD-230: Shielded Metal Arc Welding AWS Certification (Preparation and Practice) And
CIMWD-231: Shielded Metal Arc Welding AWS Certification (Practical)
Gas Tungsten Arc Welding AWS Certification
CIMWD-240: Gas Tungsten Arc Welding AWS Certification (Preparation and Practice) And
CIMWD-241: Gas Tungsten Arc Welding AWS Certification (Practical)
Gas Metal Arc Welding AWS Certification
CIMWD-250: Gas Metal Arc Welding AWS Certification (Preparation and Practice) And
CIMWD-251: Gas Metal Arc Welding AWS Certification (Practical)

Minimum Credit Hours: 23.0

REQUIRED SUPPORT COURSES

ENG-131: Introduction to College Writing
MATH-100: Basic Technical Mathematics
TAFD-120: Industrial Safety Awareness

Minimum Credit Hours: 9.0

Minimum Number Of Credits To Graduate

32.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Welder
Fabricator
Maintenance Welder
Structural Steel Welder
Pipe Welder

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Welding Technology Basic Certificate

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE

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Welding Technology Basic Certificate

Certificate of Achievement
Program Code: WTBA.CA

Contact

Industrial Technology Division • (313) 845-9656 •
technology@hfcc.edu • Technology Bldg • Room: E-172

Kevin Ridge • (313) 317-4136 • karidge@hfcc.edu •
Technology Bldg • Room: E-160

Program Information

Description

Focuses on the skills needed in performing basic Shielded Metal Arc Welding, Gas Metal Arc Welding, Gas Tungsten Arc Welding, and the thermal cutting processes. Upon successful completion, the student will have the skills necessary for an entry-level position in the manufacturing and service industries where they could use welding as a means to build and repair various products.

Learning Outcomes

- Analyze cutting and welding processes to identify and apply appropriate safe work practices.

- Communicate effectively within the industrial welding profession.

- Operate electrical and thermal cutting processes.

- Set-up and perform welding operations with the appropriate process on various metals in different situations.

Degree Specific Requirements

REQUIRED CORE COURSES

CIMWD-100: Weld Joint Design and Preparation (Safety/Joint Design)
CIMWD-101: Weld Joint Design and Preparation (Welding Code, Weld Measurement, and Hand Tools)
CIMWD-102: Weld Joint Design and Preparation (Material Cutting, Grinding, and Fabrication)
CIMWD-110: Shielded Metal Arc Welding (Flat and Horizontal Welding)
CIMWD-111: Shielded Metal Arc Welding (Vertical Welding)
CIMWD-112: Shielded Metal Arc Welding (Overhead Welding)
CIMWD-120: Gas Tungsten Arc Welding (Safety and Technology)
CIMWD-121: Gas Tungsten Arc Welding (Steel and Stainless Steel-Flat and Horizontal Welding)
CIMWD-122: Gas Tungsten Arc Welding (Steel and Stainless Steel Vertical)
CIMWD-123: Gas Tungsten Arc Welding (Aluminum)
CIMWD-130: Gas Metal Arc Welding (Flat and Horizontal)
CIMWD-131: Gas Metal Arc Welding (Vertical and Overhead Welding)

Minimum Credit Hours: 12.0

REQUIRED SUPPORT COURSES

ENG-131: Introduction to College Writing
MATH-100: Basic Technical Mathematics
TAFD-120: Industrial Safety Awareness

Minimum Credit Hours: 9.0

Minimum Number Of Credits To Graduate

21.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Production Welder
Entry-Level Maintenance Welder
Entry-Level Shop Welder
Entry-Level Fabricator

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Astronomy

Area of Study

Contact

Math and Science Division • (313) 845-9631 • math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Michael LoPresto • (313) 845-9722 • lopresto@hfcc.edu • Science Bldg • Room: J-106B

Program Information

Description

ASTR-131: Descriptive Astronomy and ASTR-133: Introductory Astronomy Laboratory are ideal for the student with little or no prior scientific or mathematical experience who wishes to explore astronomy or science in general, as well as for students preparing to be secondary school science teachers. They also provide a good introductory survey for students planning advanced study of astronomy. ASTR-231: General Astronomy serves as a more in-depth introduction to astronomy. ASTR-133: Introductory Astronomy Laboratory can be taken as the lab-component for either ASTR-131: Descriptive Astronomy or ASTR-231: General Astronomy. Students interested in majoring in astronomy at a four-year school should take ASTR-231: General Astronomy, as well as PHYS-231: Engineering Physics I and PHYS-232: Engineering Physics II.

Students interested in majoring in general science should consider completing the General Science Studies Associate in Science degree. This program gives students the option to select a track, such as Biology or Chemistry, to align with their interests, strengths, or personal goals.

Degree Specific Requirements

REQUIRED CORE COURSES

    ASTR-131: Descriptive Astronomy
    ASTR-133: Introductory Astronomy Laboratory
    ASTR-231: General Astronomy

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

MATH AND SCIENCE

Biological Sciences

Area of Study

Contact

Math and Science Division • (313) 845-9631 • math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Linda Brandt • (313) 845-9729 • lbrandt@hfcc.edu • Science Bldg • Room: J-114J

Program Information

Description

Biological sciences encompasses a wide range of fields from cell and molecular biology to ecology to organismal biology.

HFC offers a wide range of courses in Biological Sciences. Students may take a few courses in biology to satisfy the requirements for a program of study at HFC or choose from advanced courses to begin their studies toward a Bachelor's degree in a field of biology, which they can complete at a college or university;

Students who wish to pursue a career in biological sciences, or a professional career in medicine, veterinary science, dentistry, or advanced graduate work should consider this field.

Students who wish to transfer to a four year school to major in a field of biology (such as ecology, molecular biology, neuroscience, marine biology, or biology education) should follow the Biology Track of the General Science Studies program (https://www.hfcc.edu/catalog/programs/4090). This program is set up to allow students great flexibility in planning their course of study at HFC. Since the requirements for a Bachelor's degree in Biology vary depending on the field of biology, as well as on the university, students should consult with an academic advisor familiar with the requirements of the schools to which they wish to transfer.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Eastern Michigan University
Michigan State University
University of Detroit Mercy
University of Michigan - Ann Arbor
Wayne State University
University of Michigan - Dearborn

MATH AND SCIENCE

Biotechnology

Certificate of Achievement
Program Code: BIOTECH.CA

Contact

Math and Science Division • (313) 845-9631 • math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Jolie Stepaniak • (313) 845-9646 • jastepaniak@hfcc.edu • Science Bldg • Room: J-114C

Program Information

Description

Trains students for positions as biotechnology technicians in the region's molecular biology-based industries and institutions in an intensive one-year program. Henry Ford College's Biotechnology program is unique in that its curriculum is a direct outgrowth of the technical and workplace competencies identified by Southeastern Michigan's biotechnology employers for technicians.

HFC's Biotechnology program integrates authentic work-based experiences, training in modern instrumentation and new technologies, and rigorous science content to produce adaptable technicians that support the changing workplace. Although this program centers on skills identified by regional

biotechnology employers, the skills gained by students in this program will prepare them for employment in biotechnology-based industries in other regions of the country and the world. Additionally, skills gained by students in this program will prepare them for advanced training in biotechnology-related fields.

The Biotechnology Certificate will be offered only to students who already possess an associate's degree (or higher) and who seek specific coursework to prepare for jobs in biotechnology-related industries and institutions.

NOTE:
This is not a medical technology program, and so is not designed to prepare students to work in clinical laboratories.

Learning Outcomes

- Demonstrate proficiency in preparing, dispensing, and appropriately labeling laboratory solutions/reagents, and in maintaining solution/reagent integrity.
- Demonstrate proficiency in using, calibrating, and maintaining standard laboratory equipment; perform method validation.
- Perform basic laboratory measurements, calculations, and statistical analyses of data.
- Communicate professionally both orally and in writing.
- Demonstrate biotechnology laboratory workplace skills, including safety skills, scientific accountability and ethical behavior, appropriate workplace behavior.
- Demonstrate appropriate use of standard forms of laboratory documentation.
- Solve problems in biotechnology by determining the appropriate application of standard biotechnology techniques and equipment.
- Apply the scientific method to the design and execution of experiments and the analysis and interpretation of experimental data.

ADMISSION REQUIREMENTS / ELIGIBILITY

Students must apply for entry into the Advanced Skills Certificate program in Biotechnology. Applications to the program are available in the Science Office (S-115).

NOTE:
All of the following prerequisites must be completed at the time the application is submitted:

College transcripts with conference of an associates degree or higher with an overall grade point average (GPA) of 2.5 or higher

English Proficiency - Completion of ENG 131 (or equivalent) with a C grade or better

Chemistry prerequisite - Completion of CHEM 141 (or equivalent) with a C grade or better

Biology prerequisite - Completion of BIO 152 (or equivalent) with a C grade or better

Degree Specific Requirements

REQUIRED CORE COURSES

BIO-251: Microbiology
BIO-261: Nucleic Acids
BIO-262: Proteins
CHEM-151: Chemical Instrumentation and Laboratory Techniques
SCI-160: Science Laboratory Workplace Skills

Minimum Number Of Credits To Graduate

21.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Applicants considering a career in Biotechnology should be aware that, during their course of study and in subsequent employment in the field, they may work in situations where exposure to infectious agents is possible. Proper education and strict adherence to well established infection-control guidelines can reduce the risk to a minimum.

Career Opportunities

Students who have earned an associate's degree or certificate in Biotechnology can obtain an entry-level job as a Biotechnology Technician in:

Industry (e.g., pharmaceutical company)
Forensics (e.g., police crime laboratory)
Research and development (e.g., university research laboratory)
Government (e.g., USDA laboratory)

Biotechnology is a growing field, so the number of positions available for Biotechnology Technicians is expected to increase. Starting salary for students completing a Biotechnology Certificate is estimated to be $12-14/hour (based on information from regional biotech employers).

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

MATH AND SCIENCE

Biotechnology

Associate in Applied Science
Program Code: BIOTECH.AAS

Contact

Math and Science Division • (313) 845-9631 • math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Jolie Stepaniak • (313) 845-9646 • jastepaniak@hfcc.edu • Science Bldg • Room: J-114C

Program Information

Description

An intensive program which prepares students for positions as biotechnology technicians in molecular biology-based industries and institutions. Coursework integrates authentic work-based experiences, training in modern instrumentation and new technologies, and rigorous scientific content.

Learning Outcomes

- Demonstrate proficiency with current standard biotechnology laboratory techniques.

- Demonstrate proficiency in preparing, dispensing, and appropriately labeling laboratory solutions/reagents, and in maintaining solution/reagent integrity.

- Demonstrate proficiency in using, calibrating, and maintaining standard laboratory equipment; perform method validation.

- Perform basic laboratory measurements, calculations, and statistical analyses of data.

- Demonstrate the appropriate use of computers for data acquisition, analysis, reporting, record keeping, communication, and instrument control.

- Communicate professionally both orally and in writing.

- Demonstrate biotechnology laboratory workplace skills, including safety skills, scientific accountability and ethical behavior, appropriate workplace behavior.

- Demonstrate appropriate use of standard forms of laboratory documentation

- Solve problems in biotechnology by determining the appropriate application of standard biotechnology techniques and equipment

- Apply the scientific method to the design and execution of experiments and the analysis and interpretation of experimental data

ADMISSION REQUIREMENTS / ELIGIBILITY

Students must apply for entry into the Associate in Applied Science degree program in Biotechnology. Applications are available in the Science Office (J-115). All of the following prerequisites must be completed at the time the application is submitted:

College transcripts with an overall grade point average (GPA) of 2.5 or higher (with a minimum of 16 credits).

Math Proficiency - Completion of Math 141 (or equivalent) with a grade of C or better.

English Proficiency - Completion of ENG 131 (or equivalent) with a grade of C or better.

Chemistry prerequisite - Completion of CHEM 141 (or equivalent) with a grade of C or better.

Biology prerequisite - Completion of BIO 152 (or equivalent) with a grade of C or better.

Contact the Program Director for more information. Admission to the Biotechnology program is not required for enrollment in any biotechnology core course except BIO 263.

NOTE:
Students are required to pass a drug screen prior to beginning the internship experience (BIO 263). The cost for this test is in addition to the basic tuition and fee schedule. For questions regarding this policy, contract the Program Director.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including General Education courses. All Associate in Applied Science degrees require at least 15 General Education credits total, including at three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete at least one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

    Complete the following:
    ENG-131: Introduction to College Writing

3. **Computer Technology:**

    Complete the following:
    CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

    Complete at least one of the following:
    ENG-132: College Writing and Research
    ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

    Complete the following:
    MATH-141: Introduction to Statistics

NOTE:
For this program, General Education minimum credits: 16

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

    BIO-152: Cells and Molecular Biology
    BIO-251: Microbiology
    BIO-261: Nucleic Acids
    BIO-262: Proteins
    BIO-263: Biotechnology Internship
    CHEM-141: Principles of General and Inorganic Chemistry I
    CHEM-151: Chemical Instrumentation and Laboratory Techniques
    SCI-160: Science Laboratory Workplace Skills

Minimum Credit Hours: 31.0

REQUIRED SUPPORT COURSES

    PHIL-138: Moral Issues in Biotechnology

Minimum Credit Hours: 3.0

ELECTIVE COURSES

Complete as many electives as necessary to meet the minimum number of credit hours to receive your associate degree.

These courses are suggested electives. For assistance with selections, contact the Program Director.

    CHEM-142: Principles of General and Inorganic Chemistry II
    CHEM-241: Organic Chemistry I
    CRJ-234: Criminalistics: Criminal Investigation Laboratory Techniques
    PHYS-133: Principles of Physics

Minimum Credit Hours: 10.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Occupational Exposure / Risk

Applicants considering a career in biotechnology should be aware that, during their course of study

and in subsequent employment in the field, they may work in situations where exposure to

infectious agents is possible. Proper education and strict adherence to well established infection-

control guidelines can reduce the risk to a minimum.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Career Opportunities

Students who have earned an associate's degree or certificate in Biotechnology can obtain an entry-level job as a Biotechnology Technician in an:

    Industrial laboratory (e.g., Pharmaceutical company)
    Forensic laboratory (e.g., Police crime laboratory)
    Research laboratory (e.g., University research laboratory)
    Government laboratory (e.g., USDA laboratory)

This is not a medical technology program, and so is not designed to prepare students to work in clinical laboratories.

Biotechnology is a growing field, so the number of positions available for Biotechnology Technicians is expected to increase. Starting salary for students completing an associate degree is estimated to be $12-14/hour (based on information from regional biotech employers).

MATH AND SCIENCE

Engineering Technology

ASSOCIATE IN APPLIED SCIENCE

Engineering Technology

Associate in Applied Science
Program Code: ENGINTECH.AAS

Contact

Math and Science Division • (313) 845-9631 •
math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Hassan Mohseni Nameghi • (313) 317-1746 • hnameghi@hfcc.edu •
Science Bldg • Room: J-106A

Program Information

Description

Provide hands-on technical skills required in workplaces through computer- and laboratory-based practices. In addition to the major-specific specialties, the program provides a core of related courses such as physics, mathematical applications, and introduction to engineering. The math sequence eases the transfer of students to a 4-year institute for completion of a Bachelor of Engineering Technology. The program is offered in four tracks: Electrical, Mechanical, Drafting, and Architecture/Construction. Each track is described below.

Electrical: Provides students with the basic principles of electricity and proceeds to the concepts of solid state components such as diodes, transistors, integrated circuits, and microprocessor systems. More advanced courses show how these fundamental principles are applied to machine control, computers, power supplies, amplifiers, oscillators, industrial control, and instrumentation systems. The electrical technology facilities are state-of-the-art offering the high-tech training and equipment necessary to prepare you for job success in today's economy. Working conditions are simulated in five fully-equipped laboratories where students put electrical-electronics theory to practice. Along with laboratory experience setting up circuits, trouble shooting, and calibrating systems, computer-simulated circuit analysis is used in most of the electronics courses.

Mechanical: Study the design of products by learning design principles, drafting, problem solving, mechanics of materials, knowledge of manufacturing processes and machine elements design. In addition, course-works include wide background knowledge in areas such as electricity and electrical motors, science of materials, manufacturing processes, and tool design. Design is emphasized utilizing computer drafting and design technology. In a capstone course, students are required to work in a team to design and develop a new product or process in response to a sponsor need. Graduates are prepared for several types of design technologist positions such as product designer, CAD designer, tool designer, research and development technician, or manufacturing technician.

Drafting: Provides experience with CAD programs and applications. Begins with manual drafting and progresses to CAD design, detailing, and problem solving. Includes exposure to a wide variety of drafting specialties such as: layout and detailing in product design, machine element drafting, science of material, and die design. Utilizes current design software.

Architecture/Construction: Teaches architectural CAD/drafting and building construction methods and materials including both residential and commercial building types. Laboratory classes provide students with experience in the areas of residential and commercial construction materials, computer-aided drafting and design, cost estimating, construction methods, presentation techniques, residential construction practices and use of surveying equipment. Covers the principles and necessary skills of the architectural profession supported by an understanding of building construction through laboratory activities designed to provide students with a practical skill-based education.

Learning Outcomes

General learning outcomes for all tracks:
- Describe the theories and principles of engineering physics in the areas of mechanics, heat, and sound.
- Apply standard methods of mathematical analysis including Trigonometry, Intermediate Algebra, and College Algebra.
- Demonstrate the ability to work in a team environment in order to successfully follow an engineering design process and/or build a prototype.
- Develop knowledge of career opportunities and demonstrate the technical skills required by industry.
- Demonstrate professional ethics appropriate to the field of engineering.
- Additional outcomes for each track are listed below:

Electrical Learning Outcomes:
- Apply laws to the design, construction, analysis, and measurement of electric, hydraulic and pneumatic circuits.
- Interpret and develop technical drawing, schematics and diagrams.
- Create documents based on technical information using descriptive writing, diagrams, mathematical expression, computation, and graphs.
- Perform electrical/mechanical assembly/disassembly, repair, troubleshoot, and calibration of components and devices. Break out into mechanical and electrical.
- Apply electrical/mechanical laws to the operation and control of machines.
- Apply critical thinking skills to solving electro-mechanical problem.
- Develop PLC, HMI, Robot programs for the control of electro-/mechanical systems.
- Analyze a set of specifications and create a LabView virtual instrument.
- Apply electro-/mechanical laws to the application of specific industrial sensors/transducers.
- Evaluate sensor/transducer output based on computer generated data for the purpose of creating a lab report.

Mechanical Learning Outcomes:
- Apply basic mathematical and scientific principles for technical problem solving in areas such as engineering materials, applied mechanics, machine element design and manufacturing methods.

Engineering Technology

ASSOCIATE IN APPLIED SCIENCE

- Demonstrate the ability to create a part design by integrating both drafting and mechanical design skills.

- Select the appropriate component and materiel and ability to size machine elements.

- Demonstrate the ability to create a part design using 3-D CAD software program.

- Analyze mechanical components in terms of their static and strength of materials.

Drafting Learning Outcomes:

- Use drafting principles to read and comprehend a part drawing.

- Demonstrate the ability to create a part design using 3-D CAD software program and create orthographic views of a part.

- Project an auxiliary view from an inclined surface.

- Apply sketching techniques to sketch objects orthographically and pictorially.

- Analyze mechanical components in terms of their static and strength of materials.

Architecture/Construction Learning Outcomes:

- Demonstrate employable skills (attendance, written communication, verbal communication, teamwork) in the fields of Architecture and/or Construction.

- Prepare a series of commercial construction documents utilizing current industry software and accepted architectural standards and techniques.

- Prepare a series of residential construction documents utilizing current industry software and accepted architectural standards and techniques.

- Develop a series of design presentation drawings utilizing traditional and computerized techniques.

- Select the appropriate construction materials and systems in residential and commercial projects.

- Demonstrate knowledge of sustainable materials and energy efficient systems in residential and commercial projects.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least one course from the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following::
   HIST-151: American History I
   HIST-152: American History II
   POLS-131: Introduction to American Government and Political Science
   SOC-131: Introduction to Sociology

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete at least 12 credit hours of the following:
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra
   MATH-141: Introduction to Statistics
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II

NOTE:
For this program, General Education minimum credit hours: 24

Degree-Specific Requirements

Fulfill the Required Core and/or Elective Courses for this program.

REQUIRED CORE COURSES

Choose one of the following:
ENGR-102: Principles of Engineering (POE)
ENGR-130: Introduction to Engineering
Choose one of the following:
PHYS-120: Technical Physics I
PHYS-131: General Physics I

Minimum Credit Hours: 7.0

Engineering Technology

ASSOCIATE IN APPLIED SCIENCE

ELECTIVE COURSES

Students must complete one of the tracks below to satisfy their electives:

ELECTRICAL TRACK (40 CREDITS):

Complete one of the following:
ELEC-115: Digital Circuits 1
ENGR-104: Digital Electronics (DE) *PLTW Course

Complete the following:
ELEC-103: Basic Electricity
ELEC-106: Basic Electronics
ELEC-120: Basic Hydraulics
ELEC-145: AC/DC Rotating Machinery
ELEC-155: Analog Electronics 1
ELEC-185: Pneumatics
ELEC-195: AC/DC Circuit Analysis
ELEC-200: Ladder Diagrams and Motor Controls
ELEC-245: Programmable Controllers
ELEC-255: Instrumentation Systems
ELEC-260: Automation Controls and Robotics
ELEC-295: Microprocessor Systems

MECHANICAL TRACK (32 CREDITS):

Complete one of the following:
DRAF-120: Introduction to CAD
ENGR-101: Introduction to Engineering Design (IED) PLTW Course

Complete one of the following:
MTT-140: Introduction to CNC
ENGR-106: Computer Integrated Manufacturing (CIM) PLTW Course
Complete the following:
CIMWD-141: Weld Metallurgy (Non-Ferrous Metals)
CIMWD-140: Weld Metallurgy (Ferrous Metals)
DRAF-142: Industrial Detailing
ELEC-103: Basic Electricity
ELEC-200: Ladder Diagrams and Motor Controls
ENGT-245: Applied Statics
ENGT-250: Machine Elements Design
ENGT-265: Mechanical Senior Project
MTT-100: Machine Tool Processes I

DRAFTING TRACK (29 CREDITS)

Complete the following:
CIMWD-140: Weld Metallurgy (Ferrous Metals)
CIMWD-141: Weld Metallurgy (Non-Ferrous Metals)
DRAF-110: Introduction to Industrial Drafting
DRAF-120: Introduction to CAD
DRAF-130: Technical Descriptive Geometry
DRAF-142: Industrial Detailing
ENGT-245: Applied Statics
MTT-100: Machine Tool Processes I

Choose 6 credit hours from the following
ACT-116: Basic Architectural CAD
DRAF-210: Die Design
DRAF-220: Machine Element Drafting
DRAF-240: Product Drawing
DRAF-255: Advanced Techniques
ENGR-101: Introduction to Engineering Design (IED) PLTW Course

ENGR-106: Computer Integrated Manufacturing (CIM) PLTW Course
MTT-140: Introduction to CNC

ARCHITECTURE/CONSTRUCTION TRACK (34 CREDITS)

Complete one of the following:
DRAF-120: Introduction to CAD
ENGR-101: Introduction to Engineering Design (IED) PLTW Course
Complete one of the following:
ACT-101: Fundamentals of Architecture
ENGR-103: Civil Engineering and Architecture (CEA) PLTW Course

Complete the following:
ACT-116: Basic Architectural CAD
ACT-124: Construction Systems 1
ACT-150: Residential Detailing
ACT-175: Environmental Building Systems
ACT-211: Commercial Construction Systems
ACT-233: Commercial Detailing
ACT-246: Construction Estimating
ENGT-245: Applied Statics

Minimum Credit Hours: 29.0

NOTE:
Project Lead the Way (PLTW course)

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and as-sistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Wayne State University
Eastern Michigan University
Central Michigan University
Lawrence Technological University
Michigan Technological University

Environmental Studies

ASSOCIATE IN SCIENCE

Environmental Studies

Associate in Science
Program Code: ENVIRN.AS

Contact

Math and Science Division • (313) 845-9631 •
math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Mary Parekunnel • mparekunnel@hfcc.edu

Program Information

Description

Emphasizes the interdisciplinary nature of environmental problem-solving at the local, regional, and international levels. Students completing this program can transfer to bachelor programs in four broad areas: land resources, nature studies, resource and policy management, and urban service.

Learning Outcomes

- Conduct an experiment; analyze, interpret, and present results either individually or in a team setting.

- Describe the process of ecological succession.

- Recognize the components of an ecosystem and explain the relationships among them.

- Evaluate the process of biological evolution.

- Explain bio-geochemical cycles.

- Describe the major geologic processes that affect the Earth.

- Describe the scope of geologic time-scales.

- Use Geographic Information System (GIS) software to design clear and effective digital maps.

- Analyze experimental data using critical thinking skills.

- Show proficiency in the use of basic laboratory equipment and basic knowledge of safe lab procedures.

- Analyze climatic data and interpret it to describe the climate of an area.

- Interpret topographic maps.

- Write formal reports using a standard format.

- Prepare a spreadsheet that incorporates basic formulas and a variety of formatting.

- Analyze free market capitalism and outline its characteristics.

- Demonstrate how supply and demand determine prices in a market.

- Examine how public policy is developed and implemented.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for this specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society and Culture:**

   Complete the following:
   GEOG-132: World Regional Geography
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete at least nine credit hours from the following:
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II

NOTE:
For this program, General Education minimum credits: 24

MATH AND SCIENCE

Environmental Studies

ASSOCIATE IN SCIENCE

Degree-Specific Requirements

Humanities: Complete 6 credit hours from courses in:

> Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

Science and Mathematics: This category is satisfied with the General Education and Required Core Courses in this program.

Social Science: This category is satisfied within the General Education Civil Society and Culture area.

NOTE:
For this program, Degree-Specific minimum credits: 6

REQUIRED CORE COURSES

> BIO-138: Environmental Science Lecture
> BIO-139: Environmental Science Laboratory
> BIO-150: Biology: Organisms, Genes, and Ecology
> CHEM-141: Principles of General and Inorganic Chemistry I
> GEOG-131: Principles of Physical Geography
> GEOL-131: Physical Geology

> Complete one of the following courses:
> ATMS-131: Weather and Climate
> GIS-131: Geospatial Technologies

Minimum Credit Hours: 25.0

Students should consult the Environmental Studies advisor for a Recommended Course Sequence for your intended area of study.

REQUIRED SUPPORT COURSES

> BEC-152: Principles of Microeconomics
> BIO-130: Evolution and Behavior

Minimum Credit Hours: 7.0

Minimum Number Of Credits To Graduate

62.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> University of Michigan - Dearborn

Career Opportunities

Some occupations of bachelor-level environmental studies majors are:

> Teacher
> National park naturalist
> Resource policy planner
> Air quality analyst
> Regional land use planner
> Public health officer
> Public interest group director

General Science Studies

ASSOCIATE IN SCIENCE

HENRY FORD COLLEGE

FUTURE DRIVEN

General Science Studies

Associate in Science
Program Code: GENRL.AS

Contact

Math and Science Division • (313) 845-9631 • math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Janice Gilliland • (313) 845-9740 • jlgilliland@hfcc.edu • Health Careers Education Ctr • Room: G-122A

Program Information

Description

Allows individuals to explore a wide range of science and math courses before transferring to a four-year academic institution to complete a bachelor's degree.

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

2. Communication:

Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

3. Computer Technology:

Demonstrate skills for computer technology, including internet, network and advanced file operations. Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

5. Quantitative Literacy:

Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 credits total including at least three credit hours from each of the five areas below.

1. **Civil Society & Culture:**

    Complete two of the following:
    ASL-130: Deaf Culture and the Deaf Community
    GEOG-132: World Regional Geography
    HIST-151: American History I
    HIST-152: American History II
    POLS-101: American Government: Democratic Participation and Civic Engagement
    POLS-131: Introduction to American Government and Political Science
    POLS-152: International Relations
    POLS-200: Introduction to Peace and Conflict Studies
    SOC-131: Introduction to Sociology
    SOC-152: Women, Men, and Society
    SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

    Complete the following:
    ENG-131: Introduction to College Writing

3. **Computer Technology:**

    Complete the following:
    CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

    Complete at least one of the following:
    ENG-132: College Writing and Research
    ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

    Complete at least nine credit hours from the following:
    MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
    MATH-110: Intermediate Algebra
    MATH-115: College Algebra
    MATH-131: Mathematics for the Modern World
    MATH-141: Introduction to Statistics
    MATH-175: Precalculus
    MATH-180: Calculus I
    MATH-183: Calculus II
    MATH-280: Calculus III

NOTE:
For this program, General Education minimum credits: 24

MATH AND SCIENCE

General Science Studies

ASSOCIATE IN SCIENCE

Degree-Specific Requirements

Humanities: Complete 6 credit hours from the following:

> Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

Science and Mathematics: This category is satisfied with the General Education and Required Core Courses.

Social Science: This category is satisfied with the General Education Courses.

NOTE:
Degree-Specific minimum credits:.. 6

REQUIRED CORE COURSES

Complete 24 credit hours of 100-level or above science courses from two or more of the following areas:

> Astronomy (ASTR), Atmospheric Science (ATMS), Biology (BIO), Chemistry (CHEM), Geology (GEOL), Geographic Information Systems (GIS), Physics (PHYS), Physical Science (PSCI), Science (SCI)

Minimum Credit Hours: 24.0

ELECTIVE COURSES

BIOLOGY TRACK

> Complete the following:
> BIO-150: Biology: Organisms, Genes, and Ecology
> BIO-152: Cells and Molecular Biology
> CHEM-141: Principles of General and Inorganic Chemistry I
> CHEM-142: Principles of General and Inorganic Chemistry II

> Complete additional courses from the list below as needed to reach the 60 credits required for Associate in Science degrees.

> BIO-130: Evolution and Behavior
> BIO-138: Environmental Science Lecture
> BIO-139: Environmental Science Laboratory
> BIO-143: Zoology
> BIO-233: Anatomy and Physiology I
> BIO-234: Anatomy and Physiology II
> BIO-251: Microbiology
> CHEM-241: Organic Chemistry I
> CHEM-242: Organic Chemistry II
> CHEM-243: Microscale Organic Chemistry Laboratory I
> CHEM-244: Microscale Organic Chemistry Laboratory II
> GIS-131: Geospatial Technologies
> MATH-153: Calculus for Business, Life Science, and Social Sciences
> PHYS-131: General Physics I
> PHYS-132: General Physics II
> PHYS-231: Engineering Physics I
> PHYS-232: Engineering Physics II

CHEMISTRY TRACK

> Complete the following:
> CHEM-141: Principles of General and Inorganic Chemistry I
> CHEM-142: Principles of General and Inorganic Chemistry II
> CHEM-241: Organic Chemistry I
> CHEM-242: Organic Chemistry II
> CHEM-243: Microscale Organic Chemistry Laboratory I

> Complete additional courses from the list below as needed to reach the 60 credits required for Associate in Science degrees.
> CHEM-244: Microscale Organic Chemistry Laboratory II
> PHYS-231: Engineering Physics I
> PHYS-232: Engineering Physics II
> BIO-150: Biology: Organisms, Genes, and Ecology
> BIO-152: Cells and Molecular Biology

GENERAL SCIENCE TRACK

Complete 24 credit hours of 100-level or above science courses from two or more of the following areas:

> ASTR, ATMS, BIO, CHEM, GEOL, GIS, PHYS, PSCI, SCI

Electives: Complete additional courses as needed to reach the 60 credits required for Associate in Science degrees.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> University of Michigan - Dearborn
> Wayne State University

Career Opportunities

> Education
> Chemistry
> Pharmacy and pharmaceutics
> Biology and marine biology

MATH AND SCIENCE

Mathematics

Area of Study

Contact

Math and Science Division • (313) 845-9631 •
math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Scott Barnett • (313) 845-6496 • sebarnett@hfcc.edu •
Health Careers Education Ctr • Room: G-120C

Program Information

Description

The Mathematics Department offers a wide range of courses, from developmental to advanced, that enable students to fulfill program requirements at Henry Ford College, to transfer with advanced standing into four-year degree programs, or to complete admission requirements for graduate degrees where the student's undergraduate mathematical background is insufficient.

For students who come to Henry Ford without the adequate preparation and skills to be successful in college-level mathematics, the Mathematics Department has a series of developmental offerings--both traditional and modular, flexibly-paced--that prepares them for success in more-advanced courses. For example, MATH-081 prepares students for MATH-131: Mathematics for the Modern World. In addition, the Learning Laboratory provides support for students who lack specific mathematics skills in their HFC courses.

If a student's career objective is a technical degree or certificate, there is a structured two-course sequence in Technical Mathematics (MATH-100 and MATH-103) that is designed to meet the mathematical needs of these specific programs. Related problem-solving activities are integrated throughout this sequence. In addition, specialty courses are available to students in the Pharmacy Technician program (MATH-101) or the Culinary Arts program (MATH-104).

For students who plan to eventually transfer to a four-year program that has a strong mathematics component, the entire range of the traditional first two years of undergraduate mathematics courses is offered. Included is a three-course calculus sequence (MATH-180, MATH-183, MATH-280) in addition to specialty courses such as MATH-275: Discrete Mathematics, MATH-283: Linear Algebra, MATH-289: Differential Equations, and MATH-150: Finite Mathematics.

Future elementary education majors can satisfy their mathematics requirement at most institutions by completing MATH-121, MATH-221, and MATH-225. Students should consult the transfer guides to the four-year institutions of their choice for the appropriate courses.

Students preparing for an undergraduate degree in business can elect MATH-141: Introduction to Statistics.

MATH-131: Mathematics for the Modern World provides students whose program or career goals do not require a specific mathematics course sequence the opportunity to develop quantitative literacy skills that will meet HFC requirements and requirements at many four-year institutions. Students should consult their program requirements and transfer guides prior to electing this class.

The Mathematics Department emphasizes problem-solving techniques and the appropriate use of technology throughout its wide range of course offerings. Whether in science, engineering, statistics, business, health careers, education, or any other field that requires quantitative literacy, the mathematics offerings are designed to prepare students to become creative problem solvers.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Physics

Area of Study

Contact

Math and Science Division • (313) 845-9631 •
math@hfcc.edu • Health Careers Education Ctr • Room: G-122

James Smith • (313) 845-9727 • jsmith1@hfcc.edu •
Science Bldg • Room: J-106D

Program Information

Description

The Physics Department offers a variety of laboratory-based courses for students interested in studying physics, engineering, and other sciences, as well as support courses for students studying health careers, teaching, and other topics.

Students in other scientific disciplines will typically take the algebra-based courses PHYS-131:General Physics I and PHYS-132:General Physics II.

Students taking PHYS-120: Technical Physics I and PHYS-121: Technical Physics II will apply the laws of physics to solve everyday technical problems in the workplace.

PHYS-133: Principles of Physics introduces various branches of physics to students who have limited mathematical skills. It is appropriate for students needing to fill a one-semester laboratory science requirement and for those in certain programs in Health Careers and teaching.

Students interested in majoring in general science should consider completing the General Science Studies Associate in Science degree. This program gives students the option to select a track, such as Biology or Chemistry, to align with their interests, strengths, or personal goals.

Additional Program Requirements

NOTE to potential physics majors: Physics is a rigorous academic program requiring strong math and science skills. Students in physics programs at 4-year colleges and universities typically take 16-18 credit hours each semester. The majority of these courses are in physics and mathematics. Individuals planning o major in physics should plan on a rigorous high school background including four years of college prep math and science.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Pre-Engineering

Associate in Science
Program Code: ENGIN.AS

Contact

Math and Science Division • (313) 845-9631 • math@hfcc.edu • Health Careers Education Ctr • Room: G-122

Hassan Mohseni Nameghi • (313) 317-1746 • hnameghi@hfcc.edu • Science Bldg • Room: J-106A

Program Information

Description

The Pre-Engineering program covers the courses in the first two years of an engineering degree (Bachelor of Science). Students take basic physics and math courses as well as general education courses required by most of engineering schools. Upon completion of program, successful students can transfer to a 4-year institution to complete their final two years of engineering. The articulation agreements with some schools in Michigan make the transfer of our graduates easier.

NOTE:
Because the elective courses required for the various fields of engineering may vary slightly, students should meet with the Engineering Faculty Advisor for assistance with registering for the correct series of courses.

Learning Outcomes

- Describe the theories and principles of engineering physics in the areas of mechanics, gravitation, electricity and magnetism, wave motion, and physical optics.

- Apply standard methods of mathematical analysis including trigonometry and analytic geometry, differential and integral calculus, and the solutions to differential equations.

- Name the general concepts of chemistry including atomic and molecular structure, the laws of thermodynamics, and energy exchange.

- Demonstrate the ability to work in a team environment in order to successfully follow a design process and/or build a prototype.

- Use the computer successfully to store and process technical data, work with the Internet, and prepare a presentation.

- Demonstrate professional ethics appropriate to the field of engineering.

- Define the roles of different engineers and decide his/her engineering major/school.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Science degrees require at least 24 credits total, including at least three credits from each of the five areas below. For this program:

1. **Civil Society & Culture:**

    Complete one of the following:
    GEOG-132: World Regional Geography
    HIST-151: American History I
    HIST-152: American History II
    POLS-101: American Government: Democratic Participation and Civic Engagement
    POLS-131: Introduction to American Government and Political Science
    POLS-152: International Relations
    POLS-200: Introduction to Peace and Conflict Studies
    SOC-131: Introduction to Sociology
    SOC-152: Women, Men, and Society
    SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

    Complete the following:
    ENG-131: Introduction to College Writing

3. **Computer Technology:**

    Complete the following:
    CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

    Complete one of the following:
    ENG-132: College Writing and Research
    ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

    Complete all of the following:
    MATH-180: Calculus I
    MATH-183: Calculus II
    MATH-280: Calculus III
    MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credit hours: 31

Degree-Specific Requirements

NOTE:
Student should meet with the Engineering Faculty Advisor before selecting any courses from this area.

Humanities: Complete 6 credit hours from courses in:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

Science and Mathematics: This category is satisfied with the General Education and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Support Courses in this program.

NOTE:
For this program, Degree-Specific Requirements minimum credit hours: 6

REQUIRED CORE COURSES

CHEM-141: Principles of General and Inorganic Chemistry I
PHYS-231: Engineering Physics I
PHYS-232: Engineering Physics II

Minimum Credit Hours: 15.0

REQUIRED SUPPORT COURSES

Complete one of the following courses:
BEC-133: Basic Economics
BEC-151: Principles of Macroeconomics
BEC-152: Principles of Microeconomics

Minimum Credit Hours: 3.0

ELECTIVE COURSES

These courses are suggestions for electives:
BIO-131: Introduction to Biology
BIO-150: Biology: Organisms, Genes, and Ecology
BIO-152: Cells and Molecular Biology
CHEM-142: Principles of General and Inorganic Chemistry II
CIS-170: C Programming
ENGR-130: Introduction to Engineering
ENGR-201: Science of Materials
ENGR-232: Statics
ENGR-233: Dynamics
SCO-190: Co-op in Science
SCO-290: Co-op in Science

Minimum Credit Hours: 5.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Additional Program Requirements

Requirements for different fields of engineering and schools vary. Students must consult with Engineering Faculty Advisor to plan an appropriate course of study for the area of engineering and the college or university to which they intend to transfer. The minimum requirement for earning the Associate in Science degree in Pre-Engineering is 60 credit hours. However, engineering schools will accept as many as seven additional courses from HFC transfer students toward Bachelor of Science degrees in engineering. Students are encouraged to take advantage of this by completing as many courses at HFC as possible that will eventually transfer to another academic institution.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

University of Michigan - Dearborn
Wayne State University
University of Detroit Mercy
Lawrence Technological University
Michigan Technological University
University of Michigan - Ann Arbor

Career Opportunities

After completion of program and transfer to a 4-year institution, engineering students can specialize in fields such as:

Aerospace
Biomedical
Chemical
Computer and electrical
Industrial
Mechanical
Civil, including structural, transportation, environmental, geotechnical, urban planning, and water resources.

Anthropology

Area of Study

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Program Information

Description

Anthropology is the study of humankind - its origins, evolution, and diverse cultures. ANTH 131 serves as the basic introduction to the world of anthropology. Although it is recommended that students take this course before those at a higher level, it is not required. Many students, especially science majors, prefer to take ANTH 152 directly, thereby fulfilling an important foreign culture requirement at many four-year institutions.

Degree Specific Requirements

REQUIRED CORE COURSES

ANTH-131: Introduction to Anthropology
ANTH-152: Middle Eastern Peoples and Cultures
ANTH-153: Introduction to Archaeology

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Art Foundations

Associate in Arts
Program Code: ARTFD.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Martin Anderson • (313) 845-6488 • mander@hfcc.edu • Fine Arts Bldg • Room: F-131

Program Information

Description

Offers a wide selection of courses for those interested in exploring introductory aspects of the fines arts, such as drawing, photography, painting, 3-D design, and ceramics. Course work requires students to participate in an on campus student exhibition.

Learning Outcomes

- Communicate aesthetic concepts in a variety of media employing fundamental techniques, color theory, shading, and texture.

- Describe and demonstrate artistic visual communication skills conveying aesthetic concepts through perspective drawing and sketching employing various rendering techniques and media.

- Create 3-D sculptural forms using an assortment of materials e mploying quality craftsmanship skills and the elements and principles of design.

- Illustrate through visual compositions (including portraits) fundamental figurative drawing skills and visualization methods, synthesizing. gesture, line, value, proportion, and movement of the human anatomy through direct observation in an assortment of media.

- Identify basic style changes within specific time periods, and discuss their impact and relationship to civilization..

- Discuss how techniques were developed using art concepts and the impact of major historical, cultural, political, philosophical, social, and economic events had upon significant artistic movements from prehistoric art through the twenty-first century.

- Analyze, present, and critique student original work and existing works employing the appropriate art/design vocabulary of compositional theory and the principles and elements of design.

- Demonstrate standard art methodologies and processes in the creation of art objects through mixing clay, pinching porcelain, low and high fire pottery glazing, and pottery wheel basics.

- Demonstrate standard art methodologies and processes in the creation of art objects through mixing paint, appropriate use of drawing bench, canvas prep and stretching, and palette materials and organization.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration pur- poses. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are complet- ing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

    Complete nine credit hours from the following:
    ASL-130: Deaf Culture and the Deaf Community
    GEOG-132: World Regional Geography
    HIST-151: American History I
    HIST-152: American History II
    POLS-101: American Government: Democratic Participation and Civic Engagement
    POLS-131: Introduction to American Government and Political Science
    POLS-152: International Relations
    POLS-200: Introduction to Peace and Conflict Studies
    SOC-131: Introduction to Sociology
    SOC-152: Women, Men, and Society
    SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

    Complete the following:
    ENG-131: Introduction to College Writing
    SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

    Complete one of the following:
    CIS-100: Introduction to Information Technology
    CIS-221: Instructional Technology for Elementary Teachers
    CIS-223: Instructional Technology for Secondary Teachers

4. **Critical Thinking & Information Literacy:**

    Complete one of the following:
    ENG-132: College Writing and Research
    ENG-135: Business and Technical Writing and Research
    WR-131: Religious Traditions in the World

5. **Quantitative Literacy:**

    Complete one of the following:
    CHEM-131: Principles of Chemistry
    MATH-100: Basic Technical Mathematics

MATH-101: Mathematics for Health Careers
MATH-103: Technical Mathematics
MATH-104: Mathematics for Food Service Careers
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Complete one course from the **Wellness Group**:
BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: Degree-specific requirements for Humanities are fulfilled within the Required Core Courses.

Science and Mathematics: Complete a total of 8 Science and Mathematics credits, including Science and Mathematics courses taken from the Quantitative Literacy group:

Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geographic Information Systems (GIS), Geology (GEOL), Mathematics (MATH), Physical Science (PSCI), Physics (PHYS), Science (SCI).

Social Science: Degree-specific requirements for Social Science are fulfilled within the General Education Civil Society and Culture group.

NOTE:
For this program, Degree-Specific minimum credits: 7

REQUIRED CORE COURSES

ART-101: Two-Dimensional Design
ART-102: Drawing I
ART-105: Three-Dimensional Design
ART-112: Drawing II
ART-113: Life Drawing I
ART-116: Painting I

ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-141: Ceramics 1

Minimum Credit Hours: 27.0

ELECTIVE COURSES

In addition, students must complete 9 credit hours of additional ART electives.

Choose from: Life Drawing, Art History, Ceramics, Graphic or Interior Design, Painting, Digital Photography, 3-D Design.

Minimum Credit Hours: 9.0

NOTE:
Students are asked to consult with a member of the full time art faculty for assistance in selecting elective courses.

Minimum Number Of Credits To Graduate

67.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Wayne State University
Eastern Michigan University
University of Michigan - Dearborn
College for Creative Studies

SOCIAL SCIENCE, ARTS, AND FITNESS

Ceramics

ASSOCIATE IN ARTS

Ceramics

Associate in Arts
Program Code: CERAMICS.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Steven Glazer • (313) 845-6485 • sglazer@hfcc.edu • Fine Arts Bldg • Room: F-147

Program Information

Description

Offers a wide selection of courses for both the first-time potter and those interested in operating a home pottery studio. Includes design and production techniques, hand-building and wheel-construction methods, glaze making, ceramic sculpture, kiln firing, and kiln construction.

Learning Outcomes

- Create ceramic objects through clay manipulation using the following techniques: pinch, coil, slab, press molding, throwing, underglazing, and glazing.

- Evaluate one's own personal style of working and select the preferred clay and glaze combinations, and firing temperatures, to achieve the desired aesthetic.

- Assess economics of setting up a ceramics studio and/or business including effective business practices, marketing, and display of one's work, pricing, and audience selection.

- Identify and contrast different clay types, glaze types, and firing processes.

- Identify where one's work fits into the context of historical and contemporary ceramic trends.

- Utilize current art terminology.

- Evaluate one's own work using the visual elements and principles of design.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate of Arts degrees require at least 24 hours General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete nine credit hours from the following:
   ASL-130: Deaf Culture and the Deaf Community
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**
   Complete one of the following:
   CIS-100: Introduction to Information Technology
   CIS-221: Instructional Technology for Elementary Teachers
   CIS-223: Instructional Technology for Secondary Teachers
   HCS-131: Computers in Health Care
   TAFD-117: Industrial Computer Applications

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research
   WR-131: Religious Traditions in the World

5. **Quantitative Literacy:**
   Complete one of the following:
   CHEM-131: Principles of Chemistry
   MATH-100: Basic Technical Mathematics
   MATH-101: Mathematics for Health Careers
   MATH-103: Technical Mathematics
   MATH-104: Mathematics for Food Service Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra
   MATH-121: Mathematics for Elementary Teachers I
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences

MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Complete one course from the **Wellness Group**:
BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: Degree-specific requirements for Humanities are fulfilled within the Required Core Courses.

Science and Mathematics: Complete a total of 8 Science and Mathematics credits, including any Science and Mathematics courses taken from the Quantitative Literacy group:

Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geographic Information Systems (GIS), Geology (GEOL), Mathematics (MATH), Physical Science (PSCI), Physics (PHYS), Science (SCI).

Social Science: Degree-specific requirements for Social Science are fulfilled within the General Education Civil Society and Culture group.

NOTE:
For this program, Degree-Specific minimum credits: 7

REQUIRED CORE COURSES

ART-101: Two-Dimensional Design
ART-102: Drawing I
ART-105: Three-Dimensional Design
ART-112: Drawing II
ART-116: Painting I
ART-141: Ceramics 1
ART-142: Ceramics 2
ART-150: Introduction to Digital Photography
ART-242: Ceramics 3
ART-2953: Advanced Study in Ceramics
Complete one of the following:
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art

Minimum Credit Hours: 33.0

REQUIRED SUPPORT COURSES

BBA-131: Introduction to Business

Minimum Credit Hours: 4.0

Minimum Number Of Credits To Graduate

68.0 (Including Options/Electives)

Additional Program Requirements

All students are required to participate in the graduating student exit exhibition prior to graduating.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Wayne State University
Eastern Michigan University

Child Development

Associate in Arts
Program Code: CHILD.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Tracie Varitek • (313) 845-6393 • tlvaritek@hfcc.edu • Campus Safety • Room: N-202

Program Information

Description

Designed for students seeking teacher certification with a concentration in Early Childhood Education. Focuses on teaching young children, pre-kindergarten through grade 3. Students may wish to continue studies at the university level; however, upon completion of the program students are eligible for work in various education and child care professions. Graduates wishing to pursue a bachelor's degree may transfer most if not all of the course work toward that degree.

Learning Outcomes

- Apply current educational theories and practices to a classroom setting.
- Analyze children's literature for its use in the elementary or middle school classroom.
- Apply knowledge of the physical, emotional, intellectual, and social development theories of the learner in a school setting.
- Apply knowledge of the exceptionalities, learning environments, and laws as they relate to special education programs.
- Develop lesson plans implementing educational software for grades P-8.
- Analyze elementary and middle school mathematics at the level necessary for teaching.
- Construct scientific knowledge using inquiry-based techniques.
- Follow appropriate health, physical education, nutrition, and safety practices for K-8 classrooms.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete one of the following courses:
   POLS-131: Introduction to American Government and Political Science
   EDU-260: History and Civics in Elementary Schools**

2. **Communication:**
   Complete this course:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete this course:
   CIS-221: Instructional Technology for Elementary Teachers

4. **Critical Thinking & Information Literacy:**
   Complete this course:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**
   Complete the following courses:
   MATH-121: Mathematics for Elementary Teachers I
   MATH-221: Mathematics for Elementary Teachers II

   Complete additional General Education course(s) to reach a minimum of 24 credit hours:
   GEOG-132: World Regional Geography
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   SPC-131: Fundamentals of Speaking
   WR-131: Religious Traditions in the World
   CHEM-131: Principles of Chemistry
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra*
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-225: Mathematics for Elementary Teachers III
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations
   *Math 115 or beyond is highly recommended for preparation for the Professional Readiness Exam.

**Students are encouraged to consult transfer guides and speak with an advisor regarding transferability.

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Wellness: This category is satisfied with the Required Core Courses in this program.

Humanities: Complete a total of 8 Humanities credits (including Humanities courses taken from the General Education area) from courses in:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

NOTE:
Three hours of Humanities credits are included in the Required Core Courses area.

Science and Mathematics: This category is satisfied with the General Education and Required Core Courses in this program.

Social Science: This category is satisfied with the General Education and Required Core Courses in this program.

NOTE:
For this program, Degree-Specific minimum credits: 0

REQUIRED CORE COURSES

CHD-201: Child Development: Introduction to Creative Child Care
CHD-202: Child Development CDA Portfolio/Assessment Preparation
EDU-201: Introduction to Education
EDU-202: Introduction to Education Practicum
ENG-246: Introduction to Children's Literature
HPE-260: Nutrition, Health, and Physical Education for the Classroom Teacher
PSY-131: Introductory Psychology
PSY-152: Child Psychology
PSY-256: Educational Psychology

Complete a minimum of 4 credits in science courses with a lab from the following areas:

Astronomy (ASTR), Biology (BIO), Chemistry (CHEM), Geology (GEOL), Physics (PHYS), Physical Science (PSCI), or Science (SCI)

Minimum Credit Hours: 29.0

Students should consult articulation and transfer guides for their chosen four-year institutions regarding science courses which apply towards the bachelor's degree.

ELECTIVE COURSES

Complete additional 100-level or above courses as needed to reach the 60 credits required for Associate in Arts degrees.
These are suggested electives:
ART-119: Art Education for the Elementary Teacher
HUM-250: Visual and Performing Arts for Teachers
PSY-296: The Exceptional Child
A second 100-level or higher science course is suggested

Maximum Credit Hours Necessary: 7

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Additional Program Requirements

Individuals working in child development centers must provide evidence of a current physical exam, current TB test, and Department of Social Services (FIA) clearance.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Davenport University
University of Michigan - Dearborn
Madonna University
Eastern Michigan University
Wayne State University
Marygrove College

Career Opportunities

Children's institution attendants
School child care attendants/assistant teachers
Nursery school attendants, or child monitors in private homes.

SOCIAL SCIENCE, ARTS, AND FITNESS

Children and Families

Associate in Arts
Program Code: CHILDFAM.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Marlene White • (313) 845-6311 • mwhite34@hfcc.edu • Liberal Arts Bldg • Room: K-103A

Program Information

Description

Designed for students who wish to complete an associate degree with the goal of working in early childhood settings such as home care and day care centers, Head Start, the Great Start Readiness Program (GSRP), and public school pre-kindergarten programs. It may be used as a terminal degree or a degree transferable to universities with four-year programs in Children and Families.

HFC has an articulation agreement with Madonna University. Students completing the Associate in Arts in Children and Families degree may continue their studies at Madonna University with no loss of credit hours.

Learning Outcomes

- Analyze age appropriate children's literature for use in early childhood classrooms.
- Apply knowledge and understanding of effective strategies, tools, and use of hardware for teaching in the early childhood classroom, through the appropriate use of technology.
- Use developmental knowledge and skills to create an environment that supports each child's health, physical, nutritional, and safety needs.
- Use present knowledge of child development to create a safe, healthy, and developmentally appropriate learning environment that is culturally respectful and inclusive
- Create environments that are supportive of the child's individual characteristics and developmental needs as supported by theoretical perspectives and current research.
- Apply knowledge about the importance and complex characteristics of children's families and communities.
- Create respectful, reciprocal relationships that support and empower families, and involve all families in their children's development and learning.
- Use systemic observations, documentation, and other effective assessment strategies in partnership with families and other professionals to positively influence children's development.
- Apply knowledge of children's social, emotional, physical, and cognitive changes from birth-five to teaching.
- Analyze age appropriate children's literature for its use in the early childhood classroom with infants, toddlers, and preschool children.
- Evaluate books for children birth-five for criteria such as color, pictures, words, language, bias, theme, storyline, racial stereotypes, and cultural diversity.
- Design and conduct investigations using appropriate scientific methods and techniques by developing critical thinking skills to generate answers to questions that can be investigated empirically.
- Explain proper protocol to be followed for maintaining safety in the classroom.
- Apply developmentally appropriate practices to teaching and learning.
- Apply ethical guidelines and professional standards related to early childhood practices.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration pur-poses. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are complet-ing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   HIST-151: American History I
   SOC-131: Introduction to Sociology

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete this course:
   CIS-221: Instructional Technology for Elementary Teachers

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-132: College Writing and Research
   WR-131: Religious Traditions in the World

5. Quantitative Literacy:

Complete one of the following:
MATH-100: Basic Technical Mathematics
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Wellness Group: Degree-Specific Requirements for Wellness are Fulfilled within the required support courses for this program.

Humanities: Complete at least 2 Humanities credits, including any Humanities courses taken from the General Education Civil Society &Culture group, from the following:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

Complete a total of 8 **Science and Mathematics** credits (including any Science and Mathematics courses taken from the General Education: Quantitative Literacy group) from courses in:

Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geographic Information Systems (GIS), Geology (GEOL), Mathematics (MATH), Physical Science (PSCI), Physics (PHYS), Science (SCI).

Social Science: Degree-Specific Requirements for Social Science are fulfilled within the General Education Civil Society and Culture group.

NOTE:
For this program, Degree-Specific minimum credits: 7

REQUIRED CORE COURSES

CHD-201: Child Development: Introduction to Creative Child Care
CHD-205: Infant/Toddler Care and Development
CHD-211: Exploring Early Childhood Programs-Field Experience
CHD-215: Nurturing Infant & Toddler Relationships-Practicum
CHD-231: Inquiry-Based Preschool Curriculum
CHD-232: Observation and Assessment in Early Childhood Education
CHD-233: Observation and Assessment in Early Childhood Education Practicum
CHD-234: Preschool Curriculum-Practicum
CHD-241: Developmentally-Appropriate Practices in Child Care Center Administration
CHD-242: Language and Literacy Experiences for Young Children: Birth-5

Minimum Credit Hours: 22.0

REQUIRED SUPPORT COURSES

HPE-260: Nutrition, Health, and Physical Education for the Classroom Teacher
PSY-131: Introductory Psychology
PSY-152: Child Psychology
PSY-256: Educational Psychology

Minimum Credit Hours: 12.0

ELECTIVE COURSES

CHD-202: Child Development CDA Portfolio/Assessment Preparation Required only for students wishing to apply for the CDA certificate. The CDA certificate is issued by the CDA Council.

Minimum Credit Hours: 0.0

Minimum Number Of Credits To Graduate

65.0 (Including Options/Electives)

Additional Program Requirements

Individuals employed in child development centers must provide evidence of a current physical exam, current TB test, and a Department of Human Services (DHS) clearance. An Internet Criminal History Access Tool (ICHAT) may be required by some placement facilities.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Students completing 120 clock hours in CHD classes may apply for the CDA certificate through the Council for Professional Recognition.

SOCIAL SCIENCE, ARTS, AND FITNESS

Children and Families

ASSOCIATE IN ARTS

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Madonna University
University of Michigan - Dearborn
Wayne State University
Eastern Michigan University

Career Opportunities

Home group care professional
Lead teacher
Teacher assistant
Program director
In-home care provider/owner

Community Leadership

ASSOCIATE IN ARTS

Community Leadership

Associate in Arts
Program Code: COMMLEADERSHIP.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Robert Yahrmatter • (313) 845-6389 • rayahrmatter@hfcc.edu • Campus Safety • Room: N-224

Program Information

Description

Prepares students interested in making a positive impact on individuals and society through meaningful work and careers in fields such as community and economic development, community organizing, and policy advocacy. Through this degree program, students learn the skills and develop their talents to become agents of positive, social change in various aspects of their careers and communities.

Learning Outcomes

- Examine the political systems and policy making processes (local, state, national).
- Analyze power, privilege, and oppression.
- Describe local issues, including the politics and the history of specific communities in the area.
- Describe power and apply basic power mapping tools.
- Explore interracial and intercultural dynamics of southeast Michigan.
- Explore the major historical social movements in southeast Michigan.
- Analyze justice movements for reform and liberation, and what makes a movement a movement.
- Describe different community organizing models and cultures, including theory, practice, structure, and leadership.
- Demonstrate communication, team-building, and leadership skills.
- Demonstrate methods for basic data analysis, meeting facilitation, project management, and evaluation of projects.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete the following:
   POLS-101: American Government: Democratic Participation and Civic Engagement
   SOC-131: Introduction to Sociology
   SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**
   Complete this course:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**
   Complete one of the following:
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics

NOTE:
For this program, General Education minimum credits: 26

Degree-Specific Requirements

Wellness: Complete one of the following:
BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: Complete 5 credit hours from the following subject areas:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC, except SPC-131); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

SOCIAL SCIENCE, ARTS, AND FITNESS

Community Leadership

ASSOCIATE IN ARTS

Math and Science: Complete 4 credit hours from the following subject areas:

> Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geographic Information Systems (GIS), Geology (GEOL), Mathematics (MATH), Physical Science (PSCI), Physics (PHYS), Science (SCI).

Social Science: This category is satisfied by the Required Core courses in this program.

NOTE:
For this program, Degree-Specific minimum credit hours: 11

REQUIRED CORE COURSES

> POLS-110: Introduction to Community Leadership
> POLS-111: Foundations of Community Leadership
> POLS-155: State and Local Government
> POLS-295: Community Leadership Internship
> SOC-212: Leadership in Diverse Communities and Organizations

Minimum Credit Hours: 15.0

REQUIRED SUPPORT COURSES

> BBA-133: Business Behavior and Communication

Minimum Credit Hours: 3.0

ELECTIVE COURSES

Complete as many additional 100-level or above courses as necessary to reach the 60 credits required for an associate in arts.

Minimum Credit Hours: 5.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> University of Michigan - Dearborn
> Wayne State University
> Marygrove College

Career Opportunities

This program prepares students for careers in community leadership, development and organization in non-profit and government occupations. In addition, the program provides a foundation for further study in social work, political science, urban and regional development, and urban planning.

Community Leadership

HENRY FORD COLLEGE

FUTUREDRIVEN

Community Leadership

Certificate of Achievement

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Robert Yahrmatter • (313) 845-6389 • rayahrmatter@hfcc.edu • Campus Safety • Room: N-224

Program Information

Description

Provides students the basic courses and field experience necessary for meaningful work and career advancement in fields such as community and economic development, community organizing, and policy advocacy. Students learn skills and develop their talents in order to become agents of positive social change in various aspects of their careers and communities.

Learning Outcomes

- Demonstrate awareness and knowledge of the historical, cultural, and political dimensions of the Detroit metropolitan area.

- Describe and apply the skills of effective leadership in organizations and communities.

- Use effective verbal and written communication to develop and deliver public presentations.

- Describe and apply the skills of power mapping in organizations and communities.

- Demonstrate cultural competencies within organizations and communities.

- Demonstrate skills for leading & developing campaigns, outreach, team building, developing & implementing a work plan, engaging required resources.

- Demonstrate ability to convene groups, facilitate meetings, negotiate, identify and prioritize issues.

Degree Specific Requirements

REQUIRED CORE COURSES

POLS-110: Introduction to Community Leadership
POLS-111: Foundations of Community Leadership
SOC-212: Leadership in Diverse Communities and Organizations
POLS-295: Community Leadership Internship
Complete one of the following options:
POLS-101: American Government: Democratic Participation and Civic Engagement
Or Both:
POLS-131: Introduction to American Government and Political Science And
SPC-131: Fundamentals of Speaking

Minimum Credit Hours: 16.0

Minimum Number Of Credits To Graduate

16.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

This program prepares students for careers in:

Human services and non-profits
City and local governments
Environmental services and the green economy
Community health services

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

SOCIAL SCIENCE, ARTS, AND FITNESS

Criminal Justice – Corrections/Probation and Parole

ASSOCIATE IN ARTS

Criminal Justice — Corrections/Probation and Parole

Associate in Arts
Program Code: CORAD.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Gregory Osowski • (313) 845-9859 • gosowski@hfcc.edu • Liberal Arts Bldg • Room: K-108

Program Information

Description

Designed for students interested in public service work conducted in correctional institutions, such as jails or prisons, or in professional work outside correctional institutions with juveniles or adults on probation or parole. Students completing the program benefit from articulation agreements with Eastern Michigan University, Madonna University, University of Michigan-Dearborn, and Lake Superior State University. Successfully completing this program allows students to continue their studies toward a bachelor degree in criminal justice with no loss of credit hours.

Learning Outcomes

- Describe the different psychological effects of incarceration on inmates and staff.
- Develop a well written report which effectively analyzes and communicates a given situation.
- Demonstrate and integrate an understanding of ethics and ethical behavior in/at all levels of corrections, parole, and probation.
- Demonstrate the ability to apply case, criminal, and custodial law by analyzing fact patterns and situations.
- Characterize the special needs related to the treatment of criminals in the correctional system (e.g., mentally ill, HIV, female).
- Compare and contrast how the effects of race, education, and economics impacts the corrections field.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   WR-131: Religious Traditions in the World
   Complete 6 credit hours from the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   MATH-115: College Algebra
   MATH-121: Mathematics for Elementary Teachers I
   MATH-131: Mathematics for the Modern World
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-221: Mathematics for Elementary Teachers II
   MATH-225: Mathematics for Elementary Teachers III
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Criminal Justice –
Corrections/Probation and Parole

ASSOCIATE IN ARTS

HENRY FORD COLLEGE

FUTUREDRIVEN

Degree-Specific Requirements

Wellness Group: Complete the following:
   HPE-142: Advanced First Aid

Humanities: Complete at least 2 credit hours from the following:

   Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR, except WR-131).

   NOTE:
   Remaining degree requirements for Humanities are fulfilled in the General Education area.

Science and Mathematics: Complete two science courses from different disciplines, one with a lab, from the following:

   Astronomy (ASTR), Atmospheric Science (ATMS), Biology (BIO), Geology (GEOL), Physics (PHYS) or Science (SCI) (7 credit hours minimum).

   NOTE:
   Remaining degree requirements for Science and Math are fulfilled in the General Education area.

Social Science: The Social Science degree requirement is fulfilled within the Required Core Courses and General Education areas.

NOTE:
For this program, Degree-Specific minimum credits: 12

REQUIRED CORE COURSES

   CRJ-131: Introduction to Law Enforcement and Criminal Justice
   CRJ-135: Juvenile Justice
   CRJ-136: Introduction to Corrections
   CRJ-138: Probation and Parole
   CRJ-141: Corrections Clients – Human Growth and Development
   CRJ-253: Legal Issues in Corrections/Probation and Parole
   CRJ-286: Topics in Corrections/Probation and Parole

Minimum Credit Hours: 22.0

REQUIRED SUPPORT COURSES

   PSY-131: Introductory Psychology

Minimum Credit Hours: 3.0

ELECTIVE COURSES

   Suggested elective courses (select one)
   CRJ-126: Introduction to Homeland Security
   CRJ-234: Criminalistics: Criminal Investigation Laboratory Techniques
   CRJ-291: Criminal Justice Internship 1

Minimum Credit Hours: 3.0

Minimum Number Of Credits To Graduate

64.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

   University of Michigan - Dearborn
   Eastern Michigan University
   Madonna University

Career Opportunities

Prepares students to take various entry-level positions and certification exams. Most people start out in entry-level positions as corrections officers or in court probation departments upon completion of an associate's degree. For future advancement in the institutional field or work in probation and parole, a bachelor's degree is highly recommended.

   Counseling
   Prison Corrections Officer
   Probation/Parole Officer
   Social Work

SOCIAL SCIENCE, ARTS, AND FITNESS

Criminal Justice — Law Enforcement

Associate in Arts
Program Code: LAWEF.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 •
socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Gregory Osowski • (313) 845-9859 • gosowski@hfcc.edu •
Liberal Arts Bldg • Room: K-108

Program Information

Description

Emphasizes the preservation of peace, the prevention of crime, and
the protection of life and property. Prepares students for entry into the
public service fields of law enforcement with a full working compre-
hension of the relationships between public and private concerns.
Students completing the program benefit from articulation agree-
ments with Eastern Michigan University, Madonna University, Universi-
ty of Michigan-Dearborn, and Lake Superior State University. This
program allows successful students to continue their studies toward a
bachelor degree in criminal justice with no loss of credit hours.

Learning Outcomes

• Develop a report which effectively analyses and communicates a
given situation.

• Apply case law, criminal procedure, and custodial law by analyzing
fact patterns and situations.

• Analyze critical issues in law enforcement (i.e., use of fatal force,
racial profiling, minorities in law enforcement, police misconduct)
and their impact on day to day operations of a police department.

• Distinguish between Police Community Relations and Community
Policing and how each impact Community Policing.

• Characterize the importance of ethics and ethical decisions at all
levels and processes within the criminal justice system.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet
Degree-Specific Requirements AND General Education Requirements.
Courses listed in the Required Core and/or Required Support Courses
may also be used to fulfill Degree-Specific and General Education
Requirements. Developmental courses (those numbered below 100)
cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire
program form before making course selections for registration pur-
poses. The College recommends that students meet with an advisor or
counselor well in advance of registration deadlines and before making
course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's
General Education Outcomes for this program. Students who change
their program will need to confirm in advance that they are complet-
ing all required courses for their specific program of study, including
additional General Education courses. All Associate in Arts degrees
require at least 24 General Education credits total, including at least
three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   WR-131: Religious Traditions in the World

   Complete 6 credit hours from the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and
   Civic Engagement
   POLS-131: Introduction to American Government and Political
   Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

   Complete:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   MATH-115: College Algebra
   MATH-121: Mathematics for Elementary Teachers I
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-221: Mathematics for Elementary Teachers II
   MATH-225: Mathematics for Elementary Teachers III
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Criminal Justice – Law Enforcement

ASSOCIATE IN ARTS

HENRY FORD COLLEGE
FUTUREDRIVEN

Degree-Specific Requirements

Wellness Group: Complete the following:
HPE 142: Advanced First Aid

Humanities: Complete at least 2 credit hours from the following:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR, except WR-131).

NOTE:
Remaining degree requirements for Humanities are fulfilled in the General Education area.

Science and Mathematics: Complete two science courses from two different disciplines, one with a lab, from among:

Astronomy (ASTR), Atmospheric Science (ATMS), Biology (BIO), Geology (GEOL), Physics (PHYS) or Science (SCI) (7 credit hours minimum).**NOTE:**
Remaining degree requirements for Science and Math are fulfilled in the General Education area.

Social Science: The Social Science degree requirement is fulfilled within the Required Core Courses and General Education areas.

NOTE:
For this program, Degree-Specific minimum credits: 12

REQUIRED CORE COURSES

CRJ-131: Introduction to Law Enforcement and Criminal Justice
CRJ-132: Police Administration – Staff and Line Operations
CRJ-134: Criminal Investigation
CRJ-251: Criminal Law
CRJ-252: Criminal Procedure
CRJ-285: Topics in Criminal Justice/Law Enforcement

Minimum Credit Hours: 20.0

REQUIRED SUPPORT COURSES

PSY-131: Introductory Psychology

Minimum Credit Hours: 3.0

ELECTIVE COURSES

Complete two from the following:
CRJ-135: Juvenile Justice
CRJ-126: Introduction to Homeland Security
CRJ-234: Criminalistics: Criminal Investigation Laboratory Techniques
CRJ-291: Criminal Justice Internship 1

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

65.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Madonna University
University of Michigan - Dearborn

Career Opportunities

Federal Law Enforcement
Police Officer
Private Security
State Law Enforcement

Criminal Justice — Law Enforcement with Police Academy

Associate in Arts
Program Code: LAWEFPA.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Gregory Osowski • (313) 845-9859 • gosowski@hfcc.edu • Liberal Arts Bldg • Room: K-108

Program Information

Description

Emphasizes the preservation of peace, the prevention of crime, and the protection of life and property. Prepares successful students for employment in law enforcement positions requiring both an Associate Degree and Michigan Commission on Law Enforcement Standards (MCOLES) certification. Students start this associate degree by first completing required course work at HFC, then transferring to Schoolcraft College to complete the Police Academy component of the program. Students then transfer back to HFC to receive their degree. Students completing the program benefit from articulation agreements with Eastern Michigan University, Madonna University, University of Michigan-Dearborn, and Lake Superior State University. This allows successful students to continue their studies toward a bachelor degree with no loss of credit hours.

Learning Outcomes

- Develop a report which effectively analyses and communicates a given situation.

- Apply case law, criminal procedure, and custodial law by analyzing fact patterns and situations.

- Analyze critical issues in law enforcement (i.e., use of fatal force, racial profiling, minorities in law enforcement, police misconduct) and their impact on day to day operations of a police department.

- Distinguish between police community relations and community policing and how each impact community policing.

- Characterize the importance of ethics and ethical decisions at all levels and processes within the criminal justice system.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete the following:
   WR-131: Religious Traditions in the World

   Complete 6 credit hours from the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

   Complete both:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   MATH-115: College Algebra
   MATH-121: Mathematics for Elementary Teachers I
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-221: Mathematics for Elementary Teachers II
   MATH-225: Mathematics for Elementary Teachers III

SOCIAL SCIENCE, ARTS, AND FITNESS

Criminal Justice –
Law Enforcement with Police Academy

ASSOCIATE IN ARTS

HENRY FORD COLLEGE
FUTURE DRIVEN

MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Wellness Group: This degree requirement is fulfilled within the Required Core Courses.

Humanities: Choose at least 2 credit hours from among:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR, except WR-131).

NOTE:
Remaining degree requirements for Humanities are fulfilled in the General Education area.

Science and Mathematics: Choose two science courses from different disciplines, one with a lab, from among:

Astronomy (ASTR), (Atmospheric Science (ATMS), Biology (BIO), Geology (GEOL), Physics (PHYS) or Science (SCI) (7 credit hours minimum).

NOTE:
Remaining degree requirements for Science and Math are fulfilled in the General Education area.

Social Science: This degree requirement is fulfilled within the Required Core Courses and General Education areas.

NOTE:
For this program, Degree-Specific minimum credits: 9

REQUIRED CORE COURSES

CRJ-131: Introduction to Law Enforcement and Criminal Justice
CRJ-251: Criminal Law
CRJ-285: Topics in Criminal Justice/Law Enforcement
CRJ-287: Police Academy (Completed as CJ 286 at Schoolcraft College)

Minimum Credit Hours: 31.0

CJ 286 at Schoolcraft College is transferred back to HFC as CRJ 287 and fulfills the HFC Criminal Justice - Law Enforcement with Police Academy Associate in Art degree course requirements for CRJ 132, CRJ 134, CRJ 135, CRJ 252, and HPE 142.

REQUIRED SUPPORT COURSES

PSY-131: Introductory Psychology

Minimum Credit Hours: 3.0

ELECTIVE COURSES

Complete one of the following:
CRJ-126: Introduction to Homeland Security
CRJ-234: Criminalistics: Criminal Investigation Laboratory Techniques
CRJ-291: Criminal Justice Internship 1

Minimum Credit Hours: 3.0

Minimum Number Of Credits To Graduate

70.0 (Including Options/Electives)

Additional Program Requirements

Students must pass the following requirements prior to acceptance at the Police Academy at Schoolcraft College:

Physical exam
Written exam
Criminal history background check
Other background checks as required

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Madonna University
University of Michigan - Dearborn

Career Opportunities

Federal Law Enforcement
Police Officer
Private Security
State Law Enforcement

SOCIAL SCIENCE, ARTS, AND FITNESS

Dance

Area of Study

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Diane Mancinelli • (313) 845-6314 • dmancin@hfcc.edu • Technology Bldg • Room: E-211C

Program Information

Description

HFC has a vibrant and lively dance program. Areas of instruction include tap, modern dance, and jazz. Students benefit from high-quality courses taught by HFC instructors and participation in the Full Circle Dance Company. Many guest dance artists and choreographers have worked at HFC in a variety of genres including flamenco, jazz, ballet, modern, classical Indian, ballroom, and folk. The artists teach master classes and compose dances for the Full Circle Dance Company. The Company is open to HFC students and provides intensive training and performance opportunities like the American College Dance Festival. HFC students have attended the Festival at different host colleges for the past 10 years. At the Festival, students have dances adjudicated, take master classes, attend dance concerts, and perform.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Education Paraprofessional

Certificate of Achievement
Program Code: EDPAR.CA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Tracie Varitek • (313) 845-6393 • tlvaritek@hfcc.edu • Campus Safety • Room: N-202

Program Information

Description

Designed to increase students' knowledge in specific content areas and to promote the development of interaction skills necessary for working with children. This certificate also enables those presently employed as paraprofessionals to become more effective as aides. Individuals who wish to earn an Associate in Arts degree in Pre-Elementary Education may apply the total hours of the certificate program toward that degree. However, ENG 121 and HPE 142 may not apply toward a Bachelor's degree in Elementary Education. For more information, please consult the transfer guides in the University Transfer, Advising, and Career Counseling Center.

Learning Outcomes

- Demonstrate knowledge of first aid procedures.

- Apply knowledge of literacy development to assist emergent and beginning readers.

- Analyze children's literature for its use in the elementary or middle school classroom.

- Analyze elementary and middle school mathematics at the level necessary for teaching.

- Develop lesson plans implementing educational software for grades P – 8.

- Construct scientific knowledge using inquiry-based techniques.

- Apply knowledge of the physical, emotional, intellectual, and social development theories of the learner in a school setting

Degree Specific Requirements

REQUIRED CORE COURSES

CIS-221: Instructional Technology for Elementary Teachers
ENG-121: Assisting with Elementary Reading
ENG-131: Introduction to College Writing
ENG-132: College Writing and Research
ENG-246: Introduction to Children's Literature
HPE-142: Advanced First Aid
MATH-121: Mathematics for Elementary Teachers I
MATH-221: Mathematics for Elementary Teachers II
PSY-131: Introductory Psychology
PSY-256: Educational Psychology

Minimum Credit Hours: 30.0

REQUIRED SUPPORT COURSES

4 credit hours of Science (100 level or higher)

Minimum Credit Hours: 4.0

Minimum Number Of Credits To Graduate

34.0 (Including Options/Electives)

Additional Program Requirements

The law requires new teachers, school administrators, school psychologists, and other personnel to provide documentation of a completed criminal record check. Students who complete field experiences as part of their HFC course work must provide a statewide criminal record check prior to work with children in public or non-public schools.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

School paraprofessional

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

SOCIAL SCIENCE, ARTS, AND FITNESS

Fitness Leadership

Associate in Applied Science
   Program Code: FITLD.AAS

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Carole Sloan • (313) 845-6318 • csloan@hfcc.edu • Athletic Memorial Bldg • Room: H-11

Program Information

Description

Provides knowledge necessary for careers as group exercise instructors, personal trainers, and exercise leaders in national fitness clubs, corporate wellness centers, recreation facilities, and hospitals. Explores areas relative to exercise science such as nutrition, exercise physiology, methods of teaching exercise, and first aid. Many student graduating from this program transfer to university programs in physical therapy, exercise science, athletic training, nursing, and health.

Learning Outcomes

- Devise the appropriate exercise prescription for a variety of populations (e.g., obese, athlete, diabetic) following the American College of Sports Medicine guidelines.

- Demonstrate communication skills necessary to lead one-on-one and group exercise.

- Demonstrate procedures for assessing skill and health-related components of physical fitness based on guidelines from the American College of Sports Medicine.

- Diagram the facility requirements for a wellness center as defined by the American College of Sports Medicine.

- Describe the physiological changes that occur to the systems of the body as a result of exercise.

- Perform the appropriate response to the injury situations that are likely to happen in an exercise setting.

ADMISSION REQUIREMENTS / ELIGIBILITY

There are no special admission requirements to the program, but early in the program students should contact the director of the program to understand the sequence of classes in the program.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Applied Science degrees require at least 15 credits total including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research

5. **Quantitative Literacy:**

   Complete one of the following:
   AUTO-135: Mathematics for the Technician
   BMA-110: Business Math
   CHEM-131: Principles of Chemistry
   ENGR-232: Statics
   MATH-100: Basic Technical Mathematics
   MATH-101: Mathematics for Health Careers
   MATH-103: Technical Mathematics
   MATH-104: Mathematics for Food Service Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra

MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations
TAMA-120: Industrial Applications of Basic Mathematical Principles

Degree-Specific Requirements

Fulfill the Required Core, Required Support, and/or Elective Courses for this program.

REQUIRED CORE COURSES

Complete one of the following:
HPE-141: Introduction to Health and Wellness Or
HPE-140: Lifetime Wellness

Complete all of the following:
HPE-142: Advanced First Aid
HPE-150: Exercise Physiology
HPE-151: Methods for Teaching Exercise
HPE-152: Tests and Measurements
HPE-154: Facilities and Equipment
HPE-192: Internship in Physical Education

Complete one of the following:
HPE-153: Nutrition Or
HPE-158: Introduction to Nutrition Or
HPE-253: Nutrition for the Professional

Complete one of the following:
HPEA-117: Strength Training and Physical Conditioning I Or
HPEA-217: Strength Training and Physical Conditioning II

Minimum Credit Hours: 21.0

REQUIRED SUPPORT COURSES

BBA-131: Introduction to Business
BIO-131: Introduction to Biology
BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II

Minimum Credit Hours: 19.0

ELECTIVE COURSES

Complete 5 credit hours from among the following courses:
HPEA-121: Pilates
HPEA-122: Yoga
HPEA-126: Aerobic Dance
HPEA-127: Aquacise
HPEA-155: Relaxation Techniques for Stress Management
HPE-260: Nutrition, Health, and Physical Education for the Classroom Teacher
HPE-265: Sports Psychology

Either:
HPEA-104: Basketball I Or
HPEA-204: Basketball II

Either:
HPEA-110: Volleyball I Or
HPEA-210: Volleyball II

Either:
DNCA-141: Beginning Ballet Or
DNCA-142: Intermediate Ballet

Either:
DNCA-131: Beginning Latin and Ballroom Dance Or
DNCA-132: Intermediate Latin and Ballroom Dance

Either:
DNCA-151: Beginning Modern Dance Or
DNCA-152: Intermediate Modern Dance

Either:
DNCA-161: Beginning Jazz Dance Or
DNCA-162: Intermediate Jazz Dance

Minimum Credit Hours: 5.0

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Students interested in taking industry certification exams such as the American Council on Exercise (ACE) or American College of Sports Medicine (ACSM) may elect to do so at the completion of the program. Two courses in the program, HPE 150-Exercise Physiology and HPE 151-Methods for Teaching Exercise, are designed to help students be successful with certification.

Fitness Leadership
ASSOCIATE IN APPLIED SCIENCE

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

> Eastern Michigan University
> University of Michigan - Ann Arbor
> Michigan State University
> Central Michigan University
> Wayne State University

Career Opportunities

A third party independent study funded by the American Council on Exercise completed a study of salaries on people working as personal trainers and group exercise leaders in 2013. The study reported a 12% increase in salaries since 2010, the time of the last study. Currently, the average national salary for personal trainers and group exercise leaders working full-time is $52,537 and for those working part-time in north central United States, exercise instructors are averaging an hourly rate of $26. The survey can be accessed at http://www.acefitness.org/salary/docs/ACE_SalarySurvey.pdf.

A future exercise leader who can work one-on-one with people wanting to improve their health as well as teach classes in aerobics, yoga, or water exercise can find an exciting career path with the Fitness Leadership program. This program provides the student with the credentials and experience to become a leader in the fitness industry.

Fitness Leadership: Certificate of Achievement

HENRY FORD COLLEGE
FUTUREDRIVEN

Fitness Leadership: Certificate of Achievement

Certificate of Achievement
Program Code: FITLD.CA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Carole Sloan • (313) 845-6318 • csloan@hfcc.edu • Athletic Memorial Bldg • Room: H-11

Program Information

Description

Designed to help students respond to the increasing demand for highly-trained, certified exercise instructors and personal trainers in national fitness clubs, corporate fitness centers, area-wide recreation facilities and hospitals. To become a successful fitness trainer, an individual needs to be knowledgeable in exercise science, skilled at motivating individuals to make lifestyle changes, and aware of current and future trends in the profession. This programs offer a wide variety of courses including Exercise Physiology, Nutrition, Methods of Teaching Exercise, Strength Training, Wellness, and First Aid, and culminates with a 100 hour internship program designed to give the student experience in the field that will lead to job opportunities.

Learning Outcomes

- Devise the appropriate exercise prescription for a variety of populations (e.g., obese, athlete, diabetic) following the American College of Sports Medicine guidelines.

- Demonstrate procedures for assessing skill and health-related components of physical fitness based on guidelines from the American College of Sports Medicine.

- Diagram the facility requirements for a wellness center as defined by the American College of Sports Medicine.

- Perform the appropriate response to the injury situations that are likely to happen in an exercise setting.

ADMISSION REQUIREMENTS / ELIGIBILITY

There are no special requirements to the program. You simply need to claim Fitness Leadership as your course of study when you apply to the college or register for classes. Early in the program you should contact the director of the program to understand the sequence of classes in the program.

Degree Specific Requirements

REQUIRED CORE COURSES

BIO-233: Anatomy and Physiology I
BIO-234: Anatomy and Physiology II
HPE-142: Advanced First Aid
HPE-150: Exercise Physiology
HPE-151: Methods for Teaching Exercise
HPE-152: Tests and Measurements
HPE-154: Facilities and Equipment
HPE-192: Internship in Physical Education
HPEA-127: Aquacise

Complete one of the following:
HPE-140: Lifetime Wellness
HPE-141: Introduction to Health and Wellness

Complete one of the following:
HPE-153: Nutrition
HPE-158: Introduction to Nutrition
HPE-253: Nutrition for the Professional

Complete one of the following (Prerequisite to BIO-233):
BIO-131: Introduction to Biology
BIO-150: Biology: Organisms, Genes, and Ecology
BIO-152: Cells and Molecular Biology

Minimum Credit Hours: 33.0

NOTE:
BIO-131, BIO-150 or BIO-152 will serve as the prerequisite to BIO-233.

Minimum Number Of Credits To Graduate

33.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Registry / Certification / Licensure Exam Information

Many students are interested in taking the American Council on Exercise (ACE) or the American College of Sports Medicine (ACSM) industry certification exams at the completion of the program. The certificate/associate's degree from HFC serves as a much higher level of certification than the various industry certification exams. Even though this is the case, many students take the industry certification exam and do very well. The classes that will specifically prepare students for the various industry certification exams are HPE 150-Exercise Physiology and HPE 151-Methods for Teaching Exercise.

Statistics provided by ACE and ACSM have shown that students who have received training from a college perform well on certification exams.

The Fitness Leadership certificate serves as an excellent foundation for students entering other careers such as nursing, physical therapy, community health and business. Students may find that having two complementary areas of concentration and expertise makes them more marketable.

Fitness Leadership: Certificate of Achievement

Career Opportunities

Following completion of the certificate program, many students move into the Associate of Applied Science program in Fitness Leadership. Attaining the certificate first, enables the student to begin working in the field and collecting valuable work experience. HFC has an articulation agreement with Eastern Michigan University (EMU) allowing for a smooth transition to the University without a loss of credit hours. Additionally, many students transfer to Wayne State University (WSU) which has excellent programs in exercise science, nutrition, health, coaching, and physical therapy.

A third party independent study funded by the American Council on Exercise completed a study of salaries on people working as personal trainers and group exercise leaders in 2013. The study reported a 12% increase in salaries since 2010, the time of the last study. Currently, the average national salary for personal trainers and group exercise leaders working full-time is $52,537 and for those working part-time in north central United States, exercise instructors are averaging an hourly rate of $26. The survey can be accessed at http://www.acefitness.org/salary/docs/ACE_SalarySurvey.pdf.

A future exercise leader who can work one-on-one with people wanting to improve their health as well as teach classes in aerobics, yoga, or water exercise can find an exciting career path with the Fitness Leadership program. This program provides the student with the credentials and experience to become a leader in the fitness industry.

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

General Studies

Associate in General Studies
Program Code: GENRL.AGS

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Randall Knight • (313) 845-6367 • rknight@hfcc.edu • Fine Arts Bldg • Room: F-140

Program Information

Description

Completion of course work in the General Studies Associate degree signifies that the student is broadly educated in the major divisions of higher learning: humanities, natural sciences, mathematics, social sciences, and fine arts. The student has acquired methods of study and habits of thought which are demonstrated by an ability to analyze problems, make appropriate value judgments, and express conclusions in cogent style. The student devotes a portion of study within at least one career education course to explore career, employment, or other educational advancement opportunities.

Students in the General Studies Associate Degree should select electives to reflect both the student's interests and the requirements of the intended transfer institution. Students are encouraged to consult the transfer guide sheets located in the University, Transfer, Advising, and Career Counseling Center.

Learning Outcomes

Civil Society and Culture: Compare and contrast the United States globally with other nations or regions, addressing one or both of the following: (1) social, economic, political and cultural issues or (2) patterns of diversity or inequality, including racial, ethnic, religious or gender differences.

2. Communication: Effectively communicate ideas appropriate to their discipline using Standard English, through written and verbal communication.

3. Computer Technology: Demonstrate skills for computer technology, including internet, network and advanced file operations.   Skills will include organizing, managing, and presenting data using office productivity software. Students will also identify security and integrity threats and identify unethical actions within their social or professional environments.

Critical Thinking/Information Literacy: Demonstrate the ability to analyze and evaluate information and identify the need for research to draw conclusions, formulate inferences, solve problems and make decisions. Students will also demonstrate information literacy skills by locating, evaluating, selecting, organizing, synthesizing, and ethically documenting information from multiple sources using both informal and formal formats, as appropriate for diverse writing situations.

5. Quantitative Literacy: Apply quantitative skills to analyze situations and make decisions in a variety of contexts.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. The Associate in General Studies degree requires at least 24 credits total including at least three credit hours from the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete at least one of the following:
   ASL-130: Deaf Culture and the Deaf Community
   EDU-260: History and Civics in Elementary Schools
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing

   Complete one of the following:
   CIS-220: Systems Analysis and Design
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**
   Complete at least one of the following:
   CIS-100: Introduction to Information Technology
   CIS-221: Instructional Technology for Elementary Teachers
   CIS-223: Instructional Technology for Secondary Teachers
   HCS-131: Computers in Health Care
   TAFD-117: Industrial Computer Applications

4. **Critical Thinking & Information Literacy:**
   Complete at least one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research
   WR-131: Religious Traditions in the World

5. Quantitative Literacy:

Complete at least one of the following:
AUTO-135: Mathematics for the Technician
BMA-110: Business Math
CHEM-131: Principles of Chemistry
ENGR-232: Statics
MATH-100: Basic Technical Mathematics
MATH-101: Mathematics for Health Careers
MATH-103: Technical Mathematics
MATH-104: Mathematics for Food Service Careers
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-121: Mathematics for Elementary Teachers I
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-221: Mathematics for Elementary Teachers II
MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations
TAMA-120: Industrial Applications of Basic Mathematical Principles

NOTE:

For this program, complete additional General Education credits from those listed above to meet 24 total credit hours

Degree-Specific Requirements

Wellness: Complete one of the following:
BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: Complete one course from the following areas:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

Science and Mathematics: This category is satisfied with the General Education Courses in this program.

Career Education: Complete one career education course from any of the following areas:

Business and Computer Technology:

Accounting (BAC); Business Administration (BBA); Business Cooperative Education (BCO); Business Law (BLW); Business Math (BMA); Business Computer Application (BCA); Economics (BEC); Finance and Investing (BFN); Computer Information Systems (CIS); Computer Networking (CNT); Hospitality (HOSP); Management (MGT); Paralegal (PLGL).

Health Sciences:

Allied Health (AH); Health Care (HCS); Emergency Medical Services (EMT); Health Information Technology (HIT); Medical Office Assistant (MOA); Nursing (NSG); Ophthalmic Technician (OPT); Pharmacy Technician (PHT); Physical Therapist Assistant (PTA); Radiography (RAD); Respiratory Therapy (RTH); Surgical Technology (SRG).

Industrial Technology:

Architecture/Construction Trades (ACT); Automotive (AUTO); Center for Innovative Manufacturing Education classes (CIMEL, CIMHP, CIMMT, CIMPR, CIMTA, CIMWD); Industrial Drafting (DRAF); Electrical/Electronics (ELEC); Energy Technology (ENT); Maintenance Trades (MFMT); Industrial Cooperative Education (ICO); Renewable Energy (REEN); Trade and Apprentice Education (TAE); TAE Electrical (TAEL); TAE Foundation (TAFD); TAE Fluid Power (TAFP); TAE Graphic Design (TAGD); TAE Industrial Materials (TAIM); TAE Journey Person (TAJP); TAE Mathematics (TAMA); TAE Material Joining (TAMJ); TAE Manufacturing (TAMN); TAE Maintenance Technology (TAMT); TAE Process Instrumentation (TAPI); TAE Plumbing/Pipefitting (TAPP); TAE Sheet Metal (TASM).

NOTE:

For this program, Degree-Specific minimum credits: 3

ELECTIVE COURSES

Complete additional 100-level or above courses to reach the 60 credits required for Associate in General Studies degrees.

Maximum Credit Hours Necessary: 33

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

SOCIAL SCIENCE, ARTS, AND FITNESS

Geography

Area of Study

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Tarek Joseph • (313) 845-6402 • tjoseph@hfcc.edu • Campus Safety • Room: N-221

Program Information

Description

Geography emphasizes spatial relationships, locations, and distributions. Geographers address the questions of "where" and "why" by examining the location of people and activities across the earth's surface, and the reasons for their distribution. Geographers study spatial variations in the way people interact with one another and their environments. In short, geography is an exciting discipline that has great relevance and application to our everyday lives.

Geography courses encourage student participation and address topics such as population patterns, the spatial distribution of culture, resource use, pollution, urbanization, perception of place, the environment, and human alteration of the physical landscape. Discussion of current events from a geographic perspective enhances our understanding of complex local, national, and global issues.

Geography courses at the 100 level or above fulfill Degree-Specific Requirements for Associate in Arts degrees.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Graphic Design: Animation

CERTIFICATE OF ACHIEVEMENT

Graphic Design: Animation

Certificate of Achievement
Program Code: ANIMATE.CA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Victoria Shepherd • (313) 845-6487 • vashepherd@hfcc.edu • Fine Arts Bldg • Room: F-149

Program Information

Description

Offers experience developing skills and knowledge in the area of animation. Animators are artists who create the magic of motion. With animation commonplace on television, movies, gaming and the web, there is a demand for artists with the skill and know-how to produce creative animation. Computer and drawing skills are very important in this field.

Learning Outcomes

- Sketch and refine preliminary concepts for traditional and digital animation as well as conceptual ideation.
- Illustrate fundamentals of design through the development of animated applications.
- Apply color theory to the creation of digital and traditional design solutions, including color correction and developing intended emotive reactions.
- Utilize current graphic design terminology as a basis for discussing and evaluating works of design, both student and professional.
- Construct vector and raster files for use in motion and digital out comes.
- Develop digital work environments and appropriated file formats for saving work as well as for distribution of final output, prepare for print or file transfer.
- Utilize current industry software and equipment.
- Develop and present a portfolio of projects for use in seeking an entry-level position or transfer to a four-year degree program.

Degree Specific Requirements

REQUIRED CORE COURSES

ART-101: Two-Dimensional Design
ART-102: Drawing I
ART-107: Photoshop
ART-108: Introduction to Animation
ART-112: Drawing II
ART-113: Life Drawing I
ART-114: Graphic Design Studio 1
ART-209: 3-D Animation
ART-255: Animation Basics
ART-265: Illustration
ART-275: Advanced Projects
VTL-150: Special and Visual Effects for Stage and Screen
VTL-262: Introduction to Motion Capture

Minimum Number Of Credits To Graduate

39.0 (Including Options/Electives)

Additional Program Requirements

All graduating students must participate in a graduating exhibition.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Animator
Story Board Artist
Effects Animator
Visual Development Artist
Flash Animator
Story Board Assistant

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

Graphic Design: Associate of Arts

Graphic Design: Associate of Arts

Associate in Arts
Program Code: GPHDS.AA

Contact

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Victoria Shepherd • (313) 845-6487 • vashepherd@hfcc.edu • Fine Arts Bldg • Room: F-149

Program Information

Description

Provides a comprehensive foundation of study, emphasizing the development of theoretical, practical, and technical skills within the Graphic Design field. The program uses sequential courses that build and develop skills in a range of studio classes. Offers courses in print, front-end web design, and motion graphics. Elective courses are included to add experience in related tracks such as digital photography, illustration, and animation. Employs computer applications and tools as well as design techniques to assist the student in developing the range of skills necessary to compete in the multi-media field of graphic design.

Program Goal: To provide a foundation for success in the field of graphic design including print, front-end web design, and motion graphics, by providing experience with both software and equipment used in the industry. Geared to students seeking entry-level design work or transfer to a 4-year college design program.

Learning Outcomes

- Create visual communications for an intended message, from conceptual development to final artifact using a range of media, both traditional and digital, for final output both printed and digital.

- Incorporate historic and contemporary design influences, both period and designer, in the creation of design solutions.

- Implement appropriate typographic treatments for print and digital communications. This includes typesetting, legibility, and style as well as expressive communications.

- Sketch and refine preliminary concepts for traditional and digital outcomes as well as conceptual ideation.

- Illustrate fundamentals of design through the development of both traditional and digital applications.

- Apply color theory to the creation of digital and traditional design solutions, including color correction and developing intended emotive reactions.

- Utilize current graphic design terminology and methodology as a basis for discussing and evaluating works of design, both student and professional.

- Construct vector and raster files for use in print, motion and digital outcomes.

- Develop digital work environments and appropriated file formats for saving work as well as for distribution of final output, prepare for print or file transfer.

- Utilize current industry software and equipment.

- Develop and present a portfolio of projects for use in seeking an entry-level position or transfer to a four-year degree program.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

    Complete at least nine credit hours from the following:
    ASL-130: Deaf Culture and the Deaf Community
    GEOG-132: World Regional Geography
    HIST-151: American History I
    HIST-152: American History II
    POLS-101: American Government: Democratic Participation and Civic Engagement
    POLS-131: Introduction to American Government and Political Science
    POLS-152: International Relations
    POLS-200: Introduction to Peace and Conflict Studies
    SOC-131: Introduction to Sociology
    SOC-152: Women, Men, and Society
    SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**
    Complete the following:
    ENG-131: Introduction to College Writing
    SPC-131: Fundamentals of Speaking

3. **Computer Technology:**
    Complete the following:
    ART-275: Advanced Projects

4. **Critical Thinking & Information Literacy:**
    Complete the following:
    ENG-132: College Writing and Research

Graphic Design: Associate of Arts

ASSOCIATE IN ARTS

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5. **Quantitative Literacy:**

Complete one of the following:
CHEM-131: Principles of Chemistry
MATH-100: Basic Technical Mathematics
MATH-103: Technical Mathematics
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Wellness Group: Complete one course.
BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: Degree-specific requirements for Humanities are fulfilled within the Required Core Courses.

Complete a total of 8 S**cience and Mathematics** credits (including Science and Mathematics courses taken from the General Education: Quantitative Literacy group) from:

Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geographic Information Systems (GIS), Geology (GEOL), Mathematics (MATH), Physical Science (PSCI), Physics (PHYS), Science (SCI).

Social Science: Degree-specific requirements for Social Science are fulfilled within the General Education Civil Society and Culture group.

NOTE:
For this program, Degree-Specific minimum credits: 7

REQUIRED CORE COURSES

ART-101: Two-Dimensional Design
ART-102: Drawing I
ART-107: Photoshop
ART-114: Graphic Design Studio 1
ART-130: History of Graphic Design
ART-165: Typography
CIS-126: HTML/CSS Web Programming
ART-230: Motion Graphics
ART-245: Interactive Design
ART-214: Graphic Design Studio 2

Minimum Credit Hours: 31.0

ELECTIVE COURSES

Complete a minimum of six credit hours.

Students should consult with the Program Director for assistance with selecting appropriate elective courses from this list.
ART-105: Three-Dimensional Design
ART-108: Introduction to Animation
ART-112: Drawing II
ART-113: Life Drawing I
ART-115: Intermediate Perspective
ART-116: Painting I
ART-123: History of Modern Art
ART-150: Introduction to Digital Photography
ART-209: 3-D Animation
ART-250: Intermediate Digital Photography
ART-255: Animation Basics
ART-265: Illustration
CIS-172: JavaScript
CIS-227: Web Authoring
TCM-151: Digital Audio Editing
TCM-157: Digital Video Editing
TCM-251: Audio Production
TCM-257: Video Production I
VTL-150: Special and Visual Effects for Stage and Screen
VTL-262: Introduction to Motion Capture

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

68.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Graphic Design: Associate of Arts

ASSOCIATE IN ARTS

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Wayne State University
Eastern Michigan University

Career Opportunities

Production Designer
Graphic Designer
Visual Designer
Front-End Web Designer
Content Management Design
Illustrator
Animator
Motion Designer
Content Developer
Layout Artist

Graphic Design: Illustration
CERTIFICATE OF ACHIEVEMENT

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Graphic Design: Illustration

Certificate of Achievement
Program Code: ILLUS.CA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Victoria Shepherd • (313) 845-6487 • vashepherd@hfcc.edu • Fine Arts Bldg • Room: F-149

Program Information

Description

Provides students with skills and knowledge in the area of graphic design: illustration. As long as there have been newspapers, books, and magazines, there has been a need for hand-drawn art that tells a story or communicates an idea. Illustration is exploding in the digital environment. Illustrators need to have excellent drawing skills, know the history of their craft, and be proficient with programs such as Photoshop and Illustrator.

Learning Outcomes

- Create visual communications of an intended message, from conceptual development to final artifact using a range of media, both traditional and digital, for final output both printed and digital.

- Incorporate historic and contemporary design influences, both period and designer, in the creation of design solutions.

- Sketch and refine preliminary concepts for traditional and digital outcomes as well as conceptual ideation.

- Illustrate fundamentals of design through the development of both traditional and digital illustrations.

- Apply color theory to the creation of illustrative solutions, including color harmony and developing intended emotive reactions.

- Utilize current graphic design terminology as a basis for discussing and evaluating works of design, student and professional.

- Construct vector and raster files for use in print, motion and digital outcomes.

- Develop digital work environments and appropriated file formats for saving work.

- Utilize current industry software and equipment.

- Develop and present a portfolio of projects for use in seeking an entry-level position or transfer to a four-year degree program.

Degree Specific Requirements

REQUIRED CORE COURSES

ART-101: Two-Dimensional Design
ART-102: Drawing I
ART-107: Photoshop
ART-112: Drawing II
ART-113: Life Drawing I
ART-114: Graphic Design Studio 1
ART-115: Intermediate Perspective
ART-116: Painting I
ART-130: History of Graphic Design
ART-165: Typography
ART-265: Illustration
ART-275: Advanced Projects

Minimum Credit Hours: 36.0

Minimum Number Of Credits To Graduate

36.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Story Board Artist
Illustrator
Editorial Cartoonist
Children's Book Illustrator
Digital Artist
Graphic Artist

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

SOCIAL SCIENCE, ARTS, AND FITNESS

History

Area of Study

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Pamela Sayre • (313) 845-6396 • psayre@hfcc.edu • Liberal Arts Bldg • Room: K-103

Program Information

Description

History is what happened, what historical writings and people represent to have happened, and the application of this knowledge to us and to our time. In addition to adding zest to life, history courses meet graduation requirements. HIST 151 and HIST 152 fulfill the Civil Society and Culture General Education Outcome. History offerings cover the fields of world civilization; American history; and specialized topics such as African-American, Middle Eastern, and military history. In addition, the History Department has recently added several online courses, including the American Revolution, the American Civil War, the Cold War and the Vietnam War.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Interior Design

Associate in Arts
Program Code: INDSG.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Karen Wilmering • (313) 845-9814 • kawilmering@hfcc.edu • Fine Arts Bldg • Room: F-151

Program Information

Description

Provides a comprehensive foundation of study, emphasizing the development of theoretical, practical, and technical skills within the interior environment. This specialization is developed and formed utilizing sequential courses with specific course work in environmental psychology, architectural and interior construction materials and components, lighting and environmental systems, and a range of studio classes. The environmental systems course group will focus on building codes, sustainability, and energy conservation. Graphic, oral and written communication, and presentation skills will be evaluated and enhanced. Computer applications are employed and utilized across the core courses to assist students in developing a broad range of computer skills including Computer Aided Design (CAD).

Learning Outcomes

- Evaluate the physiological, sociological, and psychological human factor needs of users in the design of residential and commercial interiors.

- Produce professional presentation boards and 3-D models of residential and commercial interiors exhibiting quality of craftsmanship, superior graphic composition, and enhanced technical and artistic presentation skills.

- Select appropriate interior materials and finishes through critical analysis of their characteristics, properties, uses, components, construction methods, quantity calculations, performance, maintenance, and sustainability.

- Produce basic 2-D and 3-D schematic construction drawings employing technical manual and CAD architectural drafting skills.

- Exhibit artistic visual communication and presentation skills essential to conveying interior environments through perspective drawing, sketching, and rendering.

- Design an interior space from a historically significant period to include art, furniture, architecture, and interior design elements of a specific period style from antiquities to the present.

- Design commercial and residential projects utilizing knowledge of building codes and mechanical systems, including acoustical, electrical, lighting, plumbing, and HVAC and their impact on environmental, energy, and economic issues.

- Integrate lighting as a major component in a commercial interior environment.

- Design a small-scale residential project including programming documents, schematic and construction drawings, perspective drawings, and presentation boards conveying well-developed aesthetic and functional interior design concepts.

- Design a small-scale non-residential project incorporating Universal Design Principles and ADA codes and selecting sustainable materials, using evidence based design research.

- Develop a small-business mock design firm utilizing professional practice of interior design.

- Synthesize the interior design educational experience through the development of design solutions for a real client.

- Develop a professional-quality student portfolio, including resume and cover letters, to successfully enter a career in interior design or pursue a bachelor degree at a four-year institution.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete 9 credit hours from the following:
   ASL-130: Deaf Culture and the Deaf Community
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society

2. Communication:

Complete the following:
ENG-131: Introduction to College Writing
SPC-131: Fundamentals of Speaking

3. Computer Technology:

Complete one of the following:
CIS-100: Introduction to Information Technology
TAFD-117: Industrial Computer Applications

4. Critical Thinking & Information Literacy:

Complete the following:
ENG-132: College Writing and Research

5. Quantitative Literacy:

Complete one of the following:
CHEM-131: Principles of Chemistry
MATH-100: Basic Technical Mathematics
MATH-103: Technical Mathematics
MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
MATH-110: Intermediate Algebra
MATH-112: Trigonometry
MATH-115: College Algebra
MATH-131: Mathematics for the Modern World
MATH-141: Introduction to Statistics
MATH-150: Finite Mathematics
MATH-153: Calculus for Business, Life Science, and Social Sciences
MATH-175: Precalculus
MATH-180: Calculus I
MATH-183: Calculus II
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Complete one course from the **Wellness Group**:
BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities:

Degree specific requirements for Humanities are fulfilled within the Required Core Courses.

Complete a total of 8 credit hours of **Science and Mathematics** (including courses taken from the Quantitative Literacy group) from courses in:

Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geographic Information Systems (GIS), Geology (GEOL), Mathematics (MATH), Physical Science (PSCI), Physics (PHYS), Science (SCI).

Social Science: Degree specific requirements for Social Science are fulfilled within the General Education Civil Society and Culture group.

NOTE:
Minimum credits for Degree-Specific Requirements: 7

REQUIRED CORE COURSES

INTR-120: Manual Architectural Drafting for Interior Designers
INTR-130: Intro to CAD for Interior Design
INTR-131: Advanced CAD for Interior Design
INTR-180: Design and User Needs
INTR-181: Principles of Design
INTR-182: Interior Design Materials and Components
INTR-183: Perspective Drawing and Rendering
INTR-280: History of Design - Antiquities to Present
INTR-281: Residential Design Studio
INTR-283: Lighting and Environmental Systems for Interiors
INTR-284: Commercial Design Studio
INTR-285: Professional Practice for Interior Designers
INTR-287: Interior Design Synthesis

Minimum Credit Hours: 39.0

REQUIRED SUPPORT COURSES

Complete one of the following:
INTR-250: Kitchen Design Studio
INTR-251: Bath Design Studio

Minimum Credit Hours: 3.0

Minimum Number Of Credits To Graduate

73.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Interior Design

ASSOCIATE IN ARTS

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Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Lawrence Technological University
Wayne State University
College for Creative Studies

Career Opportunities

Students who complete this degree will have learned skills and abilities that will assist in seeking entry-level positions in the field of Interior Design and related disciplines or transfer to a four-year program. Many of the core Interior Design courses will transfer to College for Creative Studies, Eastern Michigan University, and Lawrence Technological University.

Architectural Draftsperson
Color Consultant
Facility Manager
Interior Designer
Residential Designer
Sales Representative:
Commercial Furniture Showroom
Home Furnishings
Manufacturers Representative

Prospective Interior Design majors should meet with the Interior Design Program Coordinator to discuss their program and sequence of study in that introductory courses may be offered in the Winter semester as well as the Fall. Call the Interior Design Program Coordinator at **313-845-9814** or e-mail **kawilmering@hfcc.edu** to schedule an appointment.

SOCIAL SCIENCE, ARTS, AND FITNESS

Kitchen & Bath Design

CERTIFICATE OF ACHIEVEMENT

Kitchen & Bath Design

Certificate of Achievement
Program Code: KITBTHDSN.CA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Karen Wilmering • (313) 845-9814 • kawilmering@hfcc.edu • Fine Arts Bldg • Room: F-151

Program Information

Description

Offers students an opportunity to express themselves creatively while developing the skills necessary to obtain employment in the kitchen and bath industry. To ensure the quality and success of this program, Interior Design faculty collaborated with the National Kitchen and Bath Association (NKBA), the governing agency accrediting kitchen and bath design programs at colleges and universities across the U.S. and Canada. This certificate program requires a 160-hour internship in the kitchen and bath industry.

Learning Outcomes

- Develop professional kitchen and bath design presentation skills and produce high quality sample boards.

- Select appropriate interior materials and finishes for kitchens and baths through critical analysis of their properties and characteristics meeting user need and budget.

- Demonstrate proficiency in manual and CAD drafting skills in the production of basic 2-D and 3-D schematic construction drawings using National Kitchen and Bath Graphic Presentation standards.

- Demonstrate and apply knowledge of building codes and mechanical systems, including acoustical, electrical, lighting, plumbing and HVAC to residential and commercial kitchen and bath environments.

- Illustrate the ability to design large-scale residential and commercial kitchen and bath projects including programming documents, schematic and construction drawings, perspective drawings and presentation boards conveying well-developed aesthetic and functional interior design. concepts.

- Demonstrate knowledge and understanding of the professional practice of interior design as it relates to the kitchen and bath industry.

- Synthesize the kitchen and bath design educational experience through the development of design solutions and apply critical thinking and highly developed design skills to a national kitchen and bath design competition.

- Students employ all aspects of technical information and skills acquired in Kitchen and Bath studio courses to a practical, super vised work environment in the kitchen and bath industry.

ACCREDITATION

The NKBA assists in the development of the kitchen and bath program curriculum to assure the course objectives and competencies meet industry standards. The HFC Kitchen and Bath Design certificate meets the rigorous curriculum standards of the NKBA and has been designated as an NKBA supported program. Becoming a supported program provides HFC and our students more than theoretical and pedagogical advice. Additional benefits from NKBA include:

State-of-the-art industry-standard kitchen and bath design software

Industry research and student scholarship opportunities. Many awards are substantial.

Extensive professional development opportunities for faculty

Annual grants toward funding NKBA student chapter activities

Discounted student NKBA membership dues

Assistance for students in obtaining internships in kitchen and bath design firms

Degree Specific Requirements

REQUIRED CORE COURSES

INTR-181: Principles of Design
INTR-185: Kitchen and Bath Materials and Estimating
INTR-250: Kitchen Design Studio
INTR-251: Bath Design Studio
INTR-255: Advanced Kitchen and Bath Studio
INTR-283: Lighting and Environmental Systems for Interiors
INTR-285: Professional Practice for Interior Designers
INTR-294: Kitchen and Bath Internship

Minimum Credit Hours: 22.0

REQUIRED SUPPORT COURSES

INTR-120: Manual Architectural Drafting for Interior Designers
INTR-130: Intro to CAD for Interior Design
INTR-187: Computer Drafting for Kitchen and Bath

Minimum Credit Hours: 8.0

ELECTIVE COURSES

Select one from the following courses:
ART-102: Drawing I
ART-107: Photoshop
ART-112: Drawing II
ART-115: Intermediate Perspective
ART-121: Art History Survey I (Pre-historic to Medieval)
ART-122: Art History Survey II
ART-123: History of Modern Art
ART-135: Art Appreciation
HUM-101: Introduction to the Humanities (has prerequisites)
INTR-131: Advanced CAD for Interior Design
INTR-183: Perspective Drawing and Rendering
INTR-280: History of Design - Antiquities to Present
INTR-281: Residential Design Studio

Minimum Credit Hours: 3.0

Kitchen & Bath Design

CERTIFICATE OF ACHIEVEMENT

Minimum Number Of Credits To Graduate

33.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Kitchen and Bath Design and Retail Sales Consultant
Kitchen and Bath Planner
Independent Kitchen and Bath Designer
Draftsperson
Manufacturer's Representative

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

SOCIAL SCIENCE, ARTS, AND FITNESS

HENRY FORD COLLEGE
FUTUREDRIVEN

Music
ASSOCIATE IN ARTS

Music

Associate in Arts
Program Code: MUSIC.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Kevin Dewey • (313) 845-6474 • kdewey@hfcc.edu • Fine Arts Bldg • Room: F-132

Program Information

Description

Credentials successful students for employment opportunities in music and prepares students for further study at a university level. Students desiring an Associate in Arts degree with a major in music must have music reading skills and basic piano keyboarding skills. Students lacking these skills need to complete MUS-134: Music Fundamentals to develop music reading skills and MUS-117: Piano Class to develop piano skills in addition to the courses listed below.

Learning Outcomes

- Perform, within a historical context, on an instrument, keyboard or voice, as a soloist and in ensemble with tone, intonation, and style at the level of a second year University School of Music student.

- Analyze four-part compositions in 18th-century style (e.g. chorale) in all major and minor keys.

- Compose four-part compositions in 18th-century style (e.g. chorale) in all major and minor keys, applying appropriate melody, rhythm, chord progression, voicing, and phrasing.

ADMISSION REQUIREMENTS / ELIGIBILITY

Students concerned about their ability to read music or piano keyboarding skills are encouraged to contact music faculty.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete nine credit hours from the following:
   ASL-130: Deaf Culture and the Deaf Community
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**
   Complete the following:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**
   Complete one of the following:
   CIS-100: Introduction to Information Technology
   CIS-221: Instructional Technology for Elementary Teachers
   CIS-223: Instructional Technology for Secondary Teachers

4. **Critical Thinking & Information Literacy:**
   Complete one of the following:
   ENG-132: College Writing and Research
   WR-131: Religious Traditions in the World

5. **Quantitative Literacy:**
   Complete at least four credit hours from the following:
   CHEM-131: Principles of Chemistry
   MATH-100: Basic Technical Mathematics
   MATH-101: Mathematics for Health Careers
   MATH-103: Technical Mathematics
   MATH-104: Mathematics for Food Service Careers
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra
   MATH-121: Mathematics for Elementary Teachers I
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-221: Mathematics for Elementary Teachers II

MATH-225: Mathematics for Elementary Teachers III
MATH-280: Calculus III
MATH-283: Linear Algebra
MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 25

Degree-Specific Requirements

Wellness Group: Complete at least one of the following:
BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: This requirement is fulfilled within the Required Core Courses.

Science and Mathematics: This requirement is fulfilled within the Quantitative Literacy category in General Education requirements and the program Required Support courses.

Social Science: This requirement is fulfilled within the Civil Society & Culture category in General Education requirements.

NOTE:
Minimum Credits for Degree-Specific: 2

REQUIRED CORE COURSES

Complete 4 credit hours in musical ensembles in any combination from the following. All ensemble classes are one credit hour.

Chorus Ensemble:
MUS-107: Chorus 1
MUS-108: Chorus 2
MUS-207: Chorus 3
MUS-208: Chorus 4

Symphony Band Ensemble:
MUS-109: Symphony Band 1
MUS-110: Symphony Band 2
MUS-209: Symphony Band 3
MUS-210: Symphony Band 4

Jazz Band Ensemble:
MUS-111: Jazz Band 1
MUS-112: Jazz Band 2
MUS-211: Jazz Band 3
MUS-212: Jazz Band 4

Vocal Jazz Ensemble:
MUS-143: Vocal Jazz Ensemble 1
MUS-144: Vocal Jazz Ensemble 2
MUS-243: Vocal Jazz Ensemble 3
MUS-244: Vocal Jazz Ensemble 4

Complete 4 credit hours from the following:

Applied Music (one credit hour courses):
MUS-113: Applied Music (one credit) 1
MUS-115: Applied Music (one credit) 2
MUS-213: Applied Music (one credit) 3
MUS-215: Applied Music (one credit) 4

Applied Music (two credit hour courses):
MUS-114: Applied Music (two credits) 1
MUS-116: Applied Music (two credits) 2
MUS-214: Applied Music (two credits) 3
MUS-216: Applied Music (two credits) 4

Complete all of the following:
MUS-118: Piano Class 2 *See NOTE below.
MUS-132: Music Literature
MUS-138: Music Theory 1
MUS-139: Music Theory 2
MUS-141: Aural Music Skills 1
MUS-142: Aural Music Skills 2
MUS-152: Music Notation with Finale 1

Complete one of the following:
MUS-232: History of Western Music 1
MUS-233: History of Western Music 2

Minimum Credit Hours: 28.0

*NOTE:
MUS 117 - Piano Class 1 or performance placement required as pre-requisite.

REQUIRED SUPPORT COURSES

PSCI-135: Sound & Light in Fine-Arts

Minimum Credit Hours: 4.0

ELECTIVE COURSES

Minimum Credit Hours: 1.0

Complete as many additional 100-level or above courses as necessary to reach the 60 credits required for an Associate in Arts degree.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Music

ASSOCIATE IN ARTS

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Wayne State University
Central Michigan University

Career Opportunities

Church music director
Community music director
Freelance musician
Music retail
Private music instructor

Philosophy

AREA OF STUDY

HENRY
FORD
COLLEGE

FUTUREDRIVEN

Philosophy

Area of Study

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Ryan Showler • (313) 845-6439 • rshowler@hfcc.edu • Campus Safety • Room: N-225

Program Information

Description

Philosophy is the love of wisdom. Wisdom is based on knowledge and insight, not on preferences or subjective beliefs. HFCs sequence of courses in philosophy is academically designed to develop critical and creative thinking skills, and to encourage intellectual integrity in the pursuit of objective methods of confirmation or disconfirmation of beliefs. Philosophy courses challenge serious students to engage in focused inquiry, to expose fallacious reasoning, and to develop sensitive approaches to understanding, evaluating, deciding, or acting in any area of significant human concern. The intellectual life begins and ends with philosophy.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Political Science

Area of Study

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Anthony Perry • (313) 845-6383 • adperry1@hfcc.edu • Campus Safety • Room: A-237

Program Information

Description

Politics is the study of who gets what, when, and how through government or other instruments of power.

Power can be exercised by individuals, interest groups, parties, nation-states, or international organizations.

Political science also examines the theory and practice of politics by focusing on political behavior and values.

Subfields include American government, public policy and administration, judicial politics, comparative

politics, international relations, and political theory.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Pre-Elementary Education

Associate in Arts
Program Code: PELED.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Tracie Varitek • (313) 845-6393 • tlvaritek@hfcc.edu • Campus Safety • Room: N-202

Program Information

Description

Designed for students seeking teacher certification in Elementary Education. This degree focuses on teaching children in grades K-8. Upon completion of this program students are eligible for work in various education and child care professions, however, transfer to and completion of a four-year university teacher preparation program is necessary for full teacher certification. When following university articulation guides, graduates pursuing a bachelor's degree should be able to transfer all of the required and elective coursework toward that degree.

Learning Outcomes

- Apply current educational theories and practices to a classroom setting.
- Analyze children's literature for its use in the elementary or middle school classroom.
- Apply knowledge of the physical, emotional, intellectual, and social development theories of the learner in a school setting.
- Apply knowledge of the exceptionalities, learning environments,
- Develop lesson plans implementing educational software for grades P-8.
- Analyze elementary and middle school mathematics at the level necessary for teaching.
- Construct scientific knowledge using inquiry-based techniques.
- Follow appropriate health, physical education, nutrition, and safety practices for K-8 classrooms.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete one of the following courses:
   EDU-260: History and Civics in Elementary Schools**
   HIST-151: American History I
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-221: Instructional Technology for Elementary Teachers

4. **Critical Thinking & Information Literacy:**

   Complete the following:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   Complete the following:
   MATH-121: Mathematics for Elementary Teachers I
   MATH-221: Mathematics for Elementary Teachers II

   Complete additional General Education course(s) to reach a minimum of 24 credit hours:
   CHEM-131: Principles of Chemistry
   GEOG-132: World Regional Geography
   HIST-152: American History II
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra*
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-225: Mathematics for Elementary Teachers III
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   SPC-131: Fundamentals of Speaking
   WR-131: Religious Traditions in the World

Pre-Elementary Education

ASSOCIATE IN ARTS

*Math 115 or beyond is highly recommended as preparation for the Professional Readiness Exam.

**Consult transfer guides and speak with an advisor regarding transferability.

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Wellness: This category is satisfied with the Required Core Courses in this program.

Humanities: Complete a total of 8 Humanities credits (including any Humanities courses taken from the General Education area) from courses in:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

NOTE:
Three hours of Humanities credits are included in the Required Core Courses area.

Science and Mathematics: This category is satisfied with the General Education and Required Core Courses in this program.

Social Science: Complete a total of 8 Social Science credits (including any Social Science courses taken from the General Education area) from courses in:

Anthropology (ANTH), Criminal Justice (CRJ), Economics (BEC), Geography (GEOG), History (HIST), Political Science (POLS), Psychology (PSY), Social Science (SSC), or Sociology (SOC).

NOTE:
Six credit hours are satisfied in the Required Core Courses category.

NOTE:
For this program, Degree-Specific minimum credits: 2

REQUIRED CORE COURSES

EDU-201: Introduction to Education
EDU-202: Introduction to Education Practicum
ENG-246: Introduction to Children's Literature
HPE-260: Nutrition, Health, and Physical Education for the Classroom Teacher
PSY-131: Introductory Psychology
PSY-256: Educational Psychology

Complete a minimum of 4 credits in science courses with a lab from the following areas:

Astronomy (ASTR), Biology (BIO), Chemistry (CHEM), Geology (GEOL), Physics (PHYS), Physical Science (PSCI), or Science (SCI)

Minimum Credit Hours: 20.0

Students should consult articulation and transfer guides for their chosen four-year institutions regarding science courses which apply towards the bachelor's degree.

ELECTIVE COURSES

Complete additional 100-level or above courses as needed to reach the 60 credits required for Associate in Arts degrees.

The courses below are suggested electives. For assistance with additional selections, contact the Program Director.

HUM-250: Visual and Performing Arts for Teachers
PSY-296: The Exceptional Child

Maximum Credit Hours Necessary: 14

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Additional Program Requirements

The law requires new teachers, school administrators, school psychologists, and other personnel to provide documentation of a completed criminal record check. Students who complete field experiences as part of their HFC coursework must provide a statewide criminal record check prior to working with children in public or non-public schools.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Marygrove College
University of Michigan - Dearborn
Wayne State University

Pre-Elementary Education

ASSOCIATE IN ARTS

HENRY FORD COLLEGE
FUTUREDRIVEN

Career Opportunities

Pre-Elementary Education program graduates may seek employment in child development centers. For those wishing to teach in K-8 schools, completion of a four-year teacher preparation program with teacher certification is necessary.

This degree requires coursework that can be transferred to most four-year teacher preparation programs without loss of credit. The elective component of this program allows students to select courses that apply toward the bachelor's degree at their intended transfer institution. Students are encouraged to consult the university guide sheets in the University Transfer, Advising, and Career Counseling Center located in Learning Resources Center.

SOCIAL SCIENCE, ARTS, AND FITNESS

Pre-Secondary Education

ASSOCIATE IN ARTS

Pre-Secondary Education

Associate in Arts
Program Code: PSCED.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Tracie Varitek • (313) 845-6393 • tlvaritek@hfcc.edu • Campus Safety • Room: N-202

Program Information

Description

Designed for individuals seeking teacher certification in Secondary Education. This degree focuses on teaching in grades 7-12. Students in this program complete General Education requirements, early professional preparation courses, and begin course work in their teaching majors and minors. Transfer to and completion of a four-year university teacher preparation program is necessary for full teacher certification. Students are advised to consult transfer guides for the school to which they intend to transfer when selecting courses.

Learning Outcomes

- Apply current educational theories and practices to a classroom setting.
- Apply content knowledge to development of lessons to be taught in grades 7 – 12.
- Apply knowledge of the physical, emotional, intellectual, and social development theories of the learner in a school setting.
- Apply knowledge of the exceptionalities, learning environments, and laws as they relate to secondary education programs.
- Develop lesson plans implementing educational software for grades 7 – 12.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete this course:
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**
   Complete this course:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete this course:
   CIS-223: Instructional Technology for Secondary Teachers

4. **Critical Thinking & Information Literacy:**
   Complete this course:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**
   Complete at least one course:
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-115: College Algebra*
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-280: Calculus III
   MATH-289: Differential Equations

   *Math 115 or beyond is highly recommended as preparation for the Professional Readiness Exam.

   Complete additional General Education course(s) from this list to reach a minimum of 25 credit hours total:

   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World
   SPC-131: Fundamentals of Speaking

NOTE:
For this program, General Education minimum credits: 25

Pre-Secondary Education

ASSOCIATE IN ARTS

Degree-Specific Requirements

Wellness: Complete one course from the following:

BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: Complete a total of 8 Humanities credits (including any Humanities courses taken from the General Education area):

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

Science and Mathematics:This category is satisfied with the required General Education and Required Core courses for this program.

Social Science: This category is satisfied in the General Education and Required Core courses in this program.

NOTE:
For this program, Degree-Specific minimum credits: 4

REQUIRED CORE COURSES

EDU-201: Introduction to Education
EDU-202: Introduction to Education Practicum
PSY-131: Introductory Psychology
PSY-256: Educational Psychology

Complete a minimum of 4 credits in science courses with a lab from the following areas:

Astronomy (ASTR), Biology (BIO), Chemistry (CHEM), Geology (GEOL), Physics (PHYS), Physical Science (PSCI), or Science (SCI)

Minimum Credit Hours: 14.0

REQUIRED SUPPORT COURSES

ELECTIVE COURSES

Complete additional 100-level or above courses as needed to reach the 60 credits required for Associate in Arts degrees.

This course is a suggested elective. For assistance with additional selections, please contact the Program Director.

PSY-260: Adolescent Psychology

Maximum Credit Hours Necessary: 17

Students considering transferring to a four-year institution are advised to consult current transfer and articulation guides to ensure that the appropriate courses are selected.

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Additional Program Requirements

The law requires new teachers, school administrators, school psychologists, and other personnel to provide documentation of a completed criminal record check. Students who complete field experiences as part of their HFC course work must provide a statewide criminal record check prior to working with children in public or non-public schools.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Marygrove College
University of Michigan - Dearborn
Wayne State University

Career Opportunities

Pre-Secondary Education program graduates who complete a bachelor degree with teacher certification may teach in middle schools or high schools.

This degree requires course work that can be transferred to most four-year teacher preparation programs without loss of credit. The elective component of this program allows students to select courses that apply toward the bachelor's degree at their intended transfer institution. Students are encouraged to consult the university guide sheets in the University Transfer, Advising, and Career Counseling Center located in Learning Resources Center.

SOCIAL SCIENCE, ARTS, AND FITNESS

Pre-Special Education

Associate in Arts
Program Code: PSPED.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Tracie Varitek • (313) 845-6393 • tlvaritek@hfcc.edu • Campus Safety • Room: N-202

Program Information

Description

Designed for students seeking teacher certification in Special Education. Focuses on teaching students with disabilities such as mental, emotional, physical, visual or hearing impairments, learning disabilities, and autism. Transfer to and completion of a four-year university teacher preparation program is necessary for full teacher certification.

Learning Outcomes

- Apply current educational theories and practices to a classroom setting.
- Analyze children's literature for its use in the elementary, special education, or middle school classroom.
- Apply knowledge of the physical, emotional, intellectual, and social development theories of the learner in a school setting.
- Apply knowledge of the exceptionalities, learning environments, and laws as they relate to special education programs.
- Develop lesson plans implementing educational software for special education students.
- Analyze elementary and middle school mathematics at the level necessary for teaching.
- Construct scientific knowledge using inquiry-based techniques.
- Follow appropriate health, physical education, nutrition, and safety practices for special education classrooms.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of student, including additional general Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hour from each of the five areas below. For this program:

1. **Civil Society & Culture:**
   Complete the following course:
   POLS-131: Introduction to American Government and Political Science

2. **Communication:**
   Complete the following course:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**
   Complete one of the following courses:
   CIS-221: Instructional Technology for Elementary Teachers
   CIS-223: Instructional Technology for Secondary Teachers

4. **Critical Thinking & Information Literacy:**
   Complete the following course:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**
   Complete the following course:
   MATH-121: Mathematics for Elementary Teachers I

   Complete additional General Education course(s) to reach a minimum of 24 credit hours:
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra*
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-221: Mathematics for Elementary Teachers II
   MATH-225: Mathematics for Elementary Teachers III
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society
   WR-131: Religious Traditions in the World
   SPC-131: Fundamentals of Speaking

*Math 115 or beyond is highly recommended as preparation for the Professional Readiness Exam.

*Consult transfer guides and speak with an advisor regarding transferability.

NOTE:
For this program, General Education minimum credits: 24

Degree-Specific Requirements

Wellness: Complete one of the the following:

HPE-140: Lifetime Wellness
HPE-142: Advanced First Aid
HPE-260: Nutrition, Health, and Physical Education for the Classroom Teacher*

*HPE-260 is highly recommended.

Humanities: Complete a total of 8 Humanities credits, including any Humanities courses taken from the General Education area:

Art (ART); Dance (DNCA); English (ENG) (except ENG-131, ENG-132, ENG-135); Foreign Language (Arabic (ARA), Chinese (CHN), French (FRE), German (GER), Italian (ITAL), Spanish (SPN)); Humanities (HUM); Interior Design (INTR); Journalism (JOUR); Music (MUS); Philosophy (PHIL); Telecommunication (TCM); Speech Communications (SPC); Theatre (THEA), Virtual Theatricality Lab (VTL), or World Religions (WR).

Three credit hours are satisfied in the Required Core Courses category.

Science and Mathematics: Complete a total of 8 Science and Mathematics credits, including Science and Mathematics courses taken from the Quantitative Literacy group:

Astronomy (ASTR), Atmospheric Studies (ATMS), Biology (BIO), Chemistry (CHEM), Geographic Information Systems (GIS), Geology (GEOL), Mathematics (MATH), Physical Science (PSCI), Physics (PHYS), Science (SCI).

NOTE:
At least 7 credit hours are satisfied in the General Education Quantitative Literacy category and within the Required Core Courses.

Social Science: This category is satisfied with the Required Core and General Education Courses in this program.

NOTE:
For this program, Degree-Specific minimum credits: 2

REQUIRED CORE COURSES

EDU-201: Introduction to Education
EDU-202: Introduction to Education Practicum
ENG-246: Introduction to Children's Literature
PSY-131: Introductory Psychology
PSY-256: Educational Psychology
PSY-296: The Exceptional Child

Complete a minimum of 4 credits in science courses with a lab from the following areas:

Astronomy (ASTR), Biology (BIO), Chemistry (CHEM), Geology (GEOL), Physics (PHYS), Physical Science (PSCI), or Science (SCI)

Minimum Credit Hours: 20.0

ELECTIVE COURSES

Complete additional 100-level or above courses as needed to reach the 60 credits required for Associate in Arts degrees.

Students considering transferring to a four-year institution are advised to consult current transfer and articulation guides to ensure that the appropriate courses are selected. For additional assistance, please contact an advisor.Maximum Credit Hours Necessary: 14

Minimum Number Of Credits To Graduate

60.0 (Including Options/Electives)

Additional Program Requirements

The law requires new teachers, school administrators, school psychologists, and other personnel to provide documentation of a completed criminal record check. Students who complete field experiences as part of their HFC coursework must provide a statewide criminal record check prior to work with children in public or non-public schools.

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Central Michigan University
Eastern Michigan University
Michigan State University
University of Detroit Mercy
University of Michigan - Dearborn
Wayne State University

SOCIAL SCIENCE, ARTS, AND FITNESS

Pre-Special Education
ASSOCIATE IN ARTS

Career Opportunities

Pre-Special Education program graduates who complete a bachelor degree with teacher certification may teach special education classes in many disability areas such as mental impairments, visual impairments, learning disabilities, emotional impairments, physical impairments, hearing impairments, speech impairments, and autism.

This degree requires coursework that can be transferred to most four-year teacher preparation programs without loss of credit. The elective component of this program allows students to select courses that apply toward the bachelor's degree at their intended transfer institution. Students are encouraged to consult the university guide sheets in the University Transfer, Advising, and Career Counseling Center located in Learning Resources Center.

Psychology

AREA OF STUDY

HENRY
FORD
COLLEGE

FUTUREDRIVEN

Psychology

Area of Study

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Patricia Lanzon • (313) 317-1532 • planzon@hfcc.edu • Liberal Arts Bldg • Room: K-307

Program Information

Description

Psychology is the study of human and animal behavior and cognition. Like anthropology and sociology, it is a relatively young social science that grew out of biology and philosophy a little over 135 years ago. Psychologists investigate all behavior—both normal and abnormal—and thinking; practitioners work in many applied and experimental settings.

PSY-131: Introduction to Psychology is the building block for all advanced courses in the discipline. This class imparts the essential psychological information you will need in order to be successful in parenting, health careers, law enforcement and legal studies, teaching, and numerous other endeavors.

The College offers a wide variety of advanced psychology courses to those who complete the introductory class. Faculty are prepared to advise students who are considering psychology as either a major or minor area of concentration.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Recording Arts Certificate

Certificate of Achievement

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Randall Knight • (313) 845-6367 • rknight@hfcc.edu • Fine Arts Bldg • Room: F-140

Program Information

Description

Provides course work in essential music skills and digital recording techniques. Covers recording engineering, mixing, and mastering of recorded works. Uses a live studio environment to promote the development of practical skills.

Learning Outcomes

- Select, set up, and place recording equipment for a variety of musical ensembles.
- Set up, manage, and use digital recording software including plug-ins.
- Communicate with musicians/clients using industry and musical terminology.
- Interpret artistic ideas and translate them into recordings.
- Prepare and master recordings for commercial release and sale.

ADMISSION REQUIREMENTS / ELIGIBILITY

Basic computer skills

Fundamental knowledge of music theory

Degree Specific Requirements

REQUIRED CORE COURSES

MUS-126: Recording Studio Engineering 1
MUS-127: Audio Mastering 1
MUS-138: Music Theory 1
MUS-141: Aural Music Skills 1
MUS-139: Music Theory 2
MUS-142: Aural Music Skills 2
MUS-117: Piano Class 1
MUS-226: Recording Studio Engineering 2
MUS-227: Audio Mastering 2
MUS-229: Advanced Studies in Audio Recording

Complete two credits from the following:
MUS-107: Chorus 1
MUS-108: Chorus 2
MUS-109: Symphony Band 1
MUS-113: Applied Music (one credit) 1
MUS-114: Applied Music (two credits) 1
MUS-115: Applied Music (one credit) 2

MUS-110: Symphony Band 2
MUS-111: Jazz Band 1
MUS-112: Jazz Band 2
MUS-143: Vocal Jazz Ensemble 1
MUS-144: Vocal Jazz Ensemble 2

Minimum Credit Hours: 28.0

REQUIRED SUPPORT COURSES

PSCI-135: Sound & Light in Fine-Arts

Minimum Credit Hours: 4.0

Minimum Number Of Credits To Graduate

32.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Career Opportunities

Studio recording engineer
Studio recording technician
Mastering engineer

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

SOCIAL SCIENCE, ARTS, AND FITNESS

Religious Studies

ASSOCIATE IN ARTS

HENRY FORD COLLEGE

FUTUREDRIVEN

Religious Studies

Associate in Arts
Program Code: RELIGSTUDIES.AA

Contact

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Joel Geffen • (313) 845-6441 • jgeffen@hfcc.edu • Liberal Arts Bldg • Room: K-104

Program Information

Description

Provides both broad overviews and focused study of the world's religious traditions. Students explore the histories, religious beliefs, philosophies, practices, mythologies, arts, and other aspects of religions using methodologies from the social sciences and humanities. The program provides a foundation for the transfer of earned credits to colleges and universities where students can continue their studies in religion or other academic disciplines. Foundations of the program include courses in Religious Traditions of the World, Introduction to the Academic Study of Religions, Eastern Religions, and Western Religions. Additional classes offer more focused explorations of Judaism, Christianity, Islam, Hinduism, Buddhism, and Native American Religious Traditions. Other key courses include The Bible as Literature, African American Religious Experience and Expression, and Myths and Symbols. Supporting and elective courses provide students with opportunities to study cultural anthropology, art, history, and philosophy. Special topics and directed study courses are also available— allowing a student to examine religious studies topics of personal interest, above and beyond those in the catalog.

Learning Outcomes

- Distinguish between academic and theological approaches to studying Religion.

- Compare the institutional aspects (myths, symbols, rituals, values, and practices) and the material expressions (art, music and dance, clothing, architecture, texts, and ritual objects) of the world's major religions.

- Compare and contrast the major characteristics of religions generally identified as "Eastern" and "Western."

- Describe the primary personalities, events, beliefs and practices associated with the world's major religions.

- Compare and contrast the histories, beliefs, and practices of major branches in the world's major religions.

- Describe the role of religion in the formation and maintenance of personal and community identity.

- Describe ways in which religious thinkers have addressed important philosophical questions.

- Analyze geo-political implications of modernization on religious activity.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete:
   GEOG-132: World Regional Geography
   WR-131: Religious Traditions in the World
   POLS-200: Introduction to Peace and Conflict Studies

2. **Communication:**

   Complete:
   ENG-131: Introduction to College Writing
   SPC-131: Fundamentals of Speaking

3. **Computer Technology:**

   Complete:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete:
   ENG-132: College Writing and Research

5. **Quantitative Literacy:**

   Complete one:
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

NOTE:
 For this program, General Education minimum credits: 24

Religious Studies

ASSOCIATE IN ARTS

Degree-Specific Requirements

Wellness Group: Complete one:

   COUN-114: Stress Management - A Personal Approach
   HPE-140: Lifetime Wellness

Humanities: This requirement is fulfilled within the Required Core Courses.

Science and Mathematics: Complete two science courses (8 credit hours minimum) from two different disciplines, one with a lab, from among: Astronomy (ASTR), Atmospheric Science (ATMS), Biology (BIO), Geology (GEOL), Physics (PHYS) or Science (SCI).

Social Science: Complete:
   ANTH-152: Middle Eastern Peoples and Cultures

NOTE:
Degree-Specific minimum credits: 13

REQUIRED CORE COURSES

   WR-130: Introduction to the Academic Study of Religion
   WR-232: Western Religions: Judaism, Christianity, and Islam
   WR-233: Eastern Religions

Minimum Credit Hours: 9.0

REQUIRED SUPPORT COURSES

Complete one of the two following academic tracks (Western or Asian and Native American Religious Traditions):

Western Religious Traditions Track

   WR-234: Judaism
   WR-235: Christianity - The First 1000 Years
   WR-241: Islam

Asian and Native American Religious Traditions Track

   WR-237: Buddhism
   WR-238: Hinduism
   WR-242: Native American Religious Traditions

Minimum Credit Hours: 9.0

ELECTIVE COURSES

Complete one course from any two of the following groups (Western, Eastern, Science, Special Topics) for a minimum of 6 credits:

Western Religious Traditions

   ART-221: Medieval Art
   ART-224: Art of Islam
   ART-227: History of Arab Art and Architecture
   ENG-245: The Bible as Literature
   HIST-112: Medieval-Early Modern World History
   HIST-261: The Modern Middle East
   WR-236: African American Religious Experience and Expression

Asian and Native American Religious Traditions

   ART-121: Art History Survey I (Pre-historic to Medieval)
   ART-122: Art History Survey II
   ART-225: Asian Art: Art of India and Southeast Asia
   ART-226: African and Afro American Art
   PHIL-201: Eastern Philosophy

Science, Philosophy, and Mythology

   PHIL-131: Introduction to Logic
   PHIL-133: History of Philosophy to the 18th Century
   PHIL-139: Ethics
   SCI-131: Revolutions in Science
   WR-240: Myths and Symbols: Deciphering the Messages of Sacred Traditions

Special Topics

   WR-280: Topics in Religious Studies

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

61.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

   Central Michigan University
   Madonna University
   Marygrove College
   Concordia University in Ann Arbor
   Wayne State University
   University of Michigan - Dearborn

Sociology
AREA OF STUDY

HENRY
FORD
COLLEGE
FUTUREDRIVEN

Sociology

Area of Study

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 •
socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

Brian Smith • (313) 845-9830 • bsmith@hfcc.edu •
Campus Safety • Room: N-219

Program Information

Description

Sociology examines human societies, behavior, and culture. The field
focuses on major areas of social life and institutions such as the econo-
my, family, mass media, and religion. Sociology places an emphasis on
the influence of economic class, race/ethnicity, and gender in under-
standing how people see the world and in how people have different
levels of power within a society.

SOC-131: Introduction to Sociology provides an overview of the
field. Students learn to analyze how societies and groups shape the
ways that people act and think. For students wishing more in-depth
exploration of sociology, the College offers SOC-132: Marriage and the
Family; SOC-151: Contemporary Social Problems; SOC-152: Women,
Men, and Society; SOC-251: Ethnic and Racial Diversity; and SOC-254/
PSY-254 Social Psychology.

Sociology courses at the 100 level or above fulfill the graduation
requirements for Associate in Arts and Associate of Science degrees in
Group III - Social Sciences. SOC-131: Introduction to Sociology fulfills
the General Education Outcomes on Civil Society & Culture.

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If
you were admitted prior to this year, please check your requirements
under the Program Evaluation section of WebAdvisor.

SOCIAL SCIENCE, ARTS, AND FITNESS

Theatre

Associate in Arts
Program Code: THEATRE.AA

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • social-science@hfcc.edu • Fine Arts Bldg • Room: F-140

George Popovich • (313) 845-6478 • popovich@hfcc.edu • Fine Arts Bldg • Room: F-127

Program Information

Description

Provides a sound basis for understanding the theory and practice of acting, directing, or technical aspects of the theatrical arts. Offers experiences designed to prepare successful students for acceptance into acting and technical theatre schools in the United States and abroad. Within the 62 credit degree program, one nine-credit emphasis from among acting, directing, or technical theatre is chosen by the student.

Learning Outcomes

• Create research papers and reviews using writing skills and research methods in the field of theatre arts.

• Evaluate theatre productions using standardized criteria.

• Describe the historical context of theatre, including how it relates to contemporary society and culture.

• Perform, direct, manage, or design a theatrical production.

• Work collaboratively to produce a theatrical production.

• Illustrate the specialized vocabulary within the theatrical arts.

• Apply time management skills to accomplish theatrical production tasks.

Degree Specific Requirements

All students receiving an Associate Degree are required to meet Degree-Specific Requirements AND General Education Requirements. Courses listed in the Required Core and/or Required Support Courses may also be used to fulfill Degree-Specific and General Education Requirements. Developmental courses (those numbered below 100) cannot be used to fulfill these requirements.

ATTENTION: It is the student's responsibility to review the entire program form before making course selections for registration purposes. The College recommends that students meet with an advisor or counselor well in advance of registration deadlines and before making course selections.

General Education Requirements

The following courses are required in this program and satisfy HFC's General Education Outcomes for this program. Students who change their program will need to confirm in advance that they are completing all required courses for their specific program of study, including additional General Education courses. All Associate in Arts degrees require at least 24 General Education credits total, including at least three credit hours from each of the five areas below. For this program:

1. **Civil Society & Culture:**

   Complete at least three of the following:
   GEOG-132: World Regional Geography
   HIST-151: American History I
   HIST-152: American History II
   POLS-101: American Government: Democratic Participation and Civic Engagement
   POLS-131: Introduction to American Government and Political Science
   POLS-152: International Relations
   POLS-200: Introduction to Peace and Conflict Studies
   SOC-131: Introduction to Sociology
   SOC-152: Women, Men, and Society
   SOC-251: Ethnic and Racial Diversity in Society

2. **Communication:**

   Complete the following:
   ENG-131: Introduction to College Writing

3. **Computer Technology:**

   Complete the following:
   CIS-100: Introduction to Information Technology

4. **Critical Thinking & Information Literacy:**

   Complete at least one of the following:
   ENG-132: College Writing and Research
   ENG-135: Business and Technical Writing and Research
   WR-131: Religious Traditions in the World

5. **Quantitative Literacy:**

   Complete at least 8 credit hours from the following:
   CHEM-131: Principles of Chemistry
   MATH-100: Basic Technical Mathematics
   MATH-103: Technical Mathematics
   MATH-1091, MATH-1092, MATH-1093, and MATH-1094, OR
   MATH-110: Intermediate Algebra
   MATH-112: Trigonometry
   MATH-115: College Algebra
   MATH-131: Mathematics for the Modern World
   MATH-141: Introduction to Statistics
   MATH-150: Finite Mathematics
   MATH-153: Calculus for Business, Life Science, and Social Sciences
   MATH-175: Precalculus
   MATH-180: Calculus I
   MATH-183: Calculus II
   MATH-280: Calculus III
   MATH-283: Linear Algebra
   MATH-289: Differential Equations

NOTE:
For this program, General Education minimum credits: 26

Degree-Specific Requirements

Wellness Group: Complete at least one of the following:
BFN-130: Principles of Investing
BFN-141: Personal Finance
COUN-110: Human Potential Seminar
COUN-114: Stress Management - A Personal Approach
COUN-119: Issues in Personal Growth
COUN-125: Life Work Planning
COUN-128: Active Parenting
Any Heath and Physical Education (HPE) course
Any Health and Physical Education Activity (HPEA) course

Humanities: This degree requirement is fulfilled within the Required Core Courses.

Science and Mathematics: This degree requirement is fulfilled within the General Education Quantitative Literacy category.

Social Science: This degree requirement is fulfilled within the General Education Civil Society & Culture category.

Minimum credits: 2

REQUIRED CORE COURSES

THEA-131: Theatre Appreciation
THEA-132: Acting I
THEA-142: Theatrical Production
THEA-150: Stagecraft
THEA-238: Theatre History
THEA-256: Directing
THEA-281: Theatre Capstone Must be taken in the semester the student will graduate.

Minimum Credit Hours: 19.0

REQUIRED SUPPORT COURSES

Choose one emphasis from the following: Acting, Directing, or Technical Theatre and complete 3 classes under that emphasis.

ACTING
THEA-144: Improvisation for the Actor
THEA-232: Acting II
THEA-260: Acting III

DIRECTING
THEA-134: Technical Theatre Specialties: Rotating Skills
THEA-144: Improvisation for the Actor
THEA-232: Acting II

TECHNICAL THEATRE
THEA-133: Technical Theatre
THEA-134: Technical Theatre Specialties: Rotating Skills

And one more Technical Theatre class from the following list:
THEA-135: Introduction to Stage Makeup
THEA-138: Stage Costuming
THEA-255: Lighting

Minimum Credit Hours: 9.0

ELECTIVE COURSES

Complete two of the following that are NOT part of your emphasis:
THEA-140: One-Act Play Production
THEA-138: Stage Costuming
THEA-134: Technical Theatre Specialties: Rotating Skills
THEA-133: Technical Theatre
THEA-145: Stage Combat
THEA-150: Stagecraft
THEA-232: Acting II
THEA-233: Advanced Technical Theatre
THEA-242: Advanced Theatrical Production
THEA-255: Lighting
THEA-257: Pantomime and Physical Techniques for the Actor
THEA-259: Experimental Theatre Production
THEA-260: Acting III This course is specifically for students transferring to four-year schools and majoring in Theatre.
THEA-270: Advanced Experimental Theatre Production
THEA-271: Advanced One-Act Play Production
THEA-272: Improvisation II
THEA-273: Voice for the Actor
THEA-2901: Directed Study
VTL-150: Special and Visual Effects for Stage and Screen
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture
VTL-263: Intermediate Motion Capture
VTL-264: Advanced Motion Capture Application
VTL-265: Introduction to Motion Capture Body Performance for Stage
VTL-266: Green Screen Visual Effects for Stage and Screen
VTL-267: Stereoscopic Cinematography for Stage and Screen
VTL-268: Film Acting I

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

62.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

SOCIAL SCIENCE, ARTS, AND FITNESS

Theatre

ASSOCIATE IN ARTS

Transfer Information

The College has articulation agreements and/or transfer guides to help students who want to transfer to other institutions once they have completed their studies at HFC. Articulation agreements ensure that graduates from HFC can transfer to another institution and work towards a bachelor's degree without a loss of coursework completed at HFC. Transfer guides denote the transferability of HFC coursework toward specific degree programs at other institutions. It is important that students who intend to transfer to another institution consult the appropriate articulation agreements and/or transfer guides to ensure the transferability of the courses they take to the institution they plan to attend. Articulation agreements and transfer guides are available on the HFC Transfer Resources page. For additional resources and assistance with transferring, students are encouraged to work with HFC's University Transfer, Advising, and Career Counseling Center (**313-845-9612**, **counseling@hfcc.edu**, Learning Resource Center). Students enrolled in this program frequently transfer to institutions such as:

Eastern Michigan University
Wayne State University
Oakland University

Visual Effects (VFX) For Stage and Screen Certificate

CERTIFICATE OF ACHIEVEMENT

HENRY FORD COLLEGE

FUTUREDRIVEN

Visual Effects (VFX) For Stage and Screen Certificate

Certificate of Achievement

Contact

Social Science, Arts, and Fitness Division • (313) 845-9625 • socialscience@hfcc.edu • Fine Arts Bldg • Room: F-140

George Popovich • (313) 845-6478 • popovich@hfcc.edu • Fine Arts Bldg • Room: F-127

Program Information

Description

Prepares students for a variety of entry-level jobs in the areas of visual effects, digital compositing, green screen, and motion capture.

Learning Outcomes

- Create a composite using at least 4 elements/layers.
- Create a 3D stereo live action clip.
- Create a 3D stereo CGI clip from stock materials.
- Place and set body markers.
- Capture body data.
- Clean marker data.
- Edit marker data.
- Create a body Motion Capture of at least 2 minutes in length mapped to a character in Motion Builder.

Degree Specific Requirements

REQUIRED CORE COURSES

ART-209: 3-D Animation
TCM-151: Digital Audio Editing
TCM-157: Digital Video Editing
TCM-251: Audio Production
TCM-257: Video Production I
VTL-150: Special and Visual Effects for Stage and Screen
VTL-235: Science Fiction, Fantasy, and Horror Films
VTL-262: Introduction to Motion Capture

Minimum Credit Hours: 20.0

REQUIRED SUPPORT COURSES

ELECTIVE COURSES

Complete two from the following:
VTL-263: Intermediate Motion Capture
VTL-264: Advanced Motion Capture Application
VTL-265: Introduction to Motion Capture Body Performance for Stage
VTL-266: Green Screen Visual Effects for Stage and Screen
VTL-267: Stereoscopic Cinematography for Stage and Screen

Minimum Credit Hours: 6.0

Minimum Number Of Credits To Graduate

26.0 (Including Options/Electives)

Program Requirements

Requirements are Subject to Change

The information represented here is for the current catalog year. If you were admitted prior to this year, please check your requirements under the Program Evaluation section of WebAdvisor.

Eastern Michigan University

Career Opportunities

A variety of career opportunities, as established by the Visual Effects Society (Industry Standard), are accessible with the skills developed in the VFX Certificate. Examples include:

Visual Effects Assistant Coordinator
Visual Effects Production Assistant or Production Associate
Visual Effects Editor or Assistant Editor
Visual Effects Previs Lead or Editor
Visual Effects Previs Sound Editor
Visual Effects Data Coordinator
Character Rigging Artist
Rigging Artist
Dustbuster

Gainful Employment Disclosure

Henry Ford College is committed to creating an educated workforce by offering occupational programs that lead to gainful employment. For information on job outlook, completion rates, and financial costs associated HFC certificate of achievement programs, visit program visit **https://www.hfcc.edu/programs/gainful-employment-disclosure**.

SOCIAL SCIENCE, ARTS, AND FITNESS

BCT	Business and Computer Technology Division		IT	Industrial Technology Division
C	Credit for Prior College-level Learning		HS	Health Sciences Division
COM	Communications Division		MS	Math and Science Division
COU	Counseling Division		SSAF	Social Science, Arts, and Fitness Division

Courses

HENRY FORD COLLEGE
FUTUREDRIVEN

ACT-101: Fundamentals of Architecture   IT C

Credit Hours:..4.00

Contact Hours:...5.00

An introduction to the building professions, including architecture, construction, and interior design. Utilizes a wide range of media and technology to explore various topics related to the architecture/construction industry. Covers architectural history, building codes, sketching, geometric construction, floor plans, elevations, building sections, details, residential and commercial blue print reading, estimating, space planning, and sustainability.

Prerequisites:.. None

ACT-104: Community Construction Applications   IT C

Credit Hours:..4.00

Contact Hours:...5.00

Covers the design and construction of residential projects, such as wood decks/patios, sheds, garages, or other community service-related projects. Evaluates the influence and structural characteristics of various materials along with functional, aesthetic, climatic, and cost considerations. Students participate in the actual construction of a typical project at a predetermined residential site.

Prerequisites:.. None

ACT-108: Deconstruction   IT

Credit Hours:..3.00

Contact Hours:...3.00

Introduces green demolition concepts. Focuses on determining how to remove a building from a site while recovering the maximum amount of material. Also emphasizes conventional construction demolition practices and alternative methods of building disassembly. Covers principles of construction, deconstruction, re-use, recycling, and current trends in architectural salvage.

Prerequisites:.. None

ACT-109: Residential Energy Efficiency and Sustainability   IT C

Credit Hours:..4.00

Contact Hours:...5.00

Introduces the principles of energy consumption and the sustainable design and construction of residential structures. Focuses on evaluating the energy efficiency and sustainability of a traditionally constructed home using current design analysis software and, upon reviewing the data, recommending a new sustainable design strategy and evaluating the impact on the home's performance. Examines a variety of current and proposed energy sources with regard to residential construction, geographical location, efficiency, and sustainability. Also covers standard and sustainable construction materials, methods, and residential terminology.

Prerequisites:.. None

ACT-112: Computers in Architecture   IT

Credit Hours:..1.00

Contact Hours:...0.93

Introduces the basic components of a CAD workstation. Topics include the use of network access, the Windows operating system, drive and directory structures, output, file management techniques in Windows and AutoCAD, Internet access, email, flatbed scanners, and digital cameras. Presents information related to the CAD workstation through utilizing AutoCAD.

Prerequisites:.. None

ACT-116: Basic Architectural CAD   IT C

Credit Hours:..4.00

Contact Hours:...5.00

An entry-level course presenting computer-aided drafting using AutoCAD and AutoCAD Architecture software (CAD). Emphasizes the efficient use of CAD to draw floor plans, elevations, and other related architectural details. Covers drawing and editing commands, layering, hatching, dimensioning, model and paper space, blocks, and printing. Also covers three-dimensional wall, door, window, and roof creation using AutoCAD Architecture software. ACT 101 is a recommended co-requisite.v

Prerequisites:.. None

ACT-124: Construction Systems 1   IT C

Credit Hours:..4.00

Contact Hours:...5.00

Introduces residential construction materials and proper installation methods with reference to geographical location, cost, and material selection. Focuses on reading and working from blueprints, and working with traditional hand and power tools. Covers building layout procedures using the level and transit as well as foundation, floor, wall framing materials, and systems. Lab work includes small-scale concrete construction and rough frame construction of a wood frame house in a controlled environment. Utilizes software to research building materials and building codes.

Prerequisites:.. None

ACT-128: Visual Communications 1   IT C

Credit Hours:..4.00

Contact Hours:...5.00

Covers various digital presentation techniques, freehand architectural sketching, combined use of various manual and electronic drawing media, and color. Coursework explores multiple software applications including, but not limited to, AutoCAD, Google® SketchUp, Photoshop, and PowerPoint. Also discusses 3-dimensional (3-D) modeling, how to control lighting, shade and shadow, scene creation, rendering, the use of digital images for presentation displays, and the use of presentation software.

Prerequisites:.. None

ACT-136: Intermediate Architectural CAD `IT` `C`

Credit Hours:..4.00

Contact Hours:..5.00

Introduces building information modeling (BIM) using Revit Architecture software, parametric software which is a complete design and documentation solution that supports all phases of design, drawing production, and schedule development for a given project. Topics include setup, drawing and editing commands, view creation, styles, dimensioning, annotation, sections, detailing, walls, doors, windows, roofs, three-dimensional (3-D) presentation, rendering, families, and printing.

Prerequisites:... ACT 101 and ACT 116

ACT-150: Residential Detailing `IT` `C`

Credit Hours:..3.00

Contact Hours:..5.00

Continues the study and drawing of residential construction documents. Emphasizes completing architectural details according to current building codes and accepted industry practice. Typical details include building sections, wall sections, door and window details, stair details, site plans, and other typical residential construction details. Utilizes AutoCAD and AutoCAD Architecture (ACA) software to complete the details.

Prerequisites:... ACT 101 and ACT 116

ACT-175: Environmental Building Systems `IT` `C`

Credit Hours:..4.00

Contact Hours:..5.00

Introduces residential environmental building systems including mechanical, electrical, and plumbing (MEP). Emphasizes sustainable design. Topics include heating systems, heat-loss calculations, supply and return air systems, water supply and disposal systems, service panels, wiring, lighting, and switch requirements. Also covers preparation of typical mechanical, electrical, and plumbing drawings using the appropriate design data and building codes. Discusses materials, fixtures, and practical shop installation as they relate to each topic area.

Prerequisites:... ACT 101 and ACT 116

ACT-190: Co-op in Architecture Construction Technology `IT` `C`

Credit Hours:..1.00

Contact Hours:..4.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:.................... Career Services Officer or Co-op Job Developer Permission

ACT-205: Advanced Architectural CAD `IT` `C`

Credit Hours:..4.00

Contact Hours:..5.00

Focuses on utilizing parametric Computer-Aided Design (CAD) software. Emphasizes using the software efficiently to complete and present architectural concepts. Topics include creating and editing wall styles, manipulating door and window styles, drawing three-dimensional roof systems, extracting schedule data, generating elevation and section views, and three-dimensional presentation techniques.

Prerequisites:.. ACT 136

ACT-211: Commercial Construction Systems `IT` `C`

Credit Hours:..3.00

Contact Hours:..5.00

Focuses on small and large commercial building construction systems, techniques, materials and methods, including soils, foundations, structural systems, wall/cladding assemblies, roofs, and interior building systems. The investigation of building uses and the consideration of materials, equipment, and services are integral parts of this course.

Prerequisites:.. ACT 124

ACT-222: Sustainable Residential Design `IT` `C`

Credit Hours:..4.00

Contact Hours:..5.00

Focuses on developing a residential design for an assigned site and client while following good design and sustainability principles. Includes site analysis and planning, building programming and design, and a set of presentation drawings along with a partial set of construction documents. Along with freehand sketching, course utilizes multiple software applications including, but not limited to, AutoCAD, Google® SketchUp, Photoshop, and PowerPoint.

Prerequisites:.. ACT 128, ACT 136, and ACT 150

ACT-224: Construction Systems 2 `IT` `C`

Credit Hours:..4.00

Contact Hours:..5.00

Focuses on residential construction materials with reference to geographic location, cost, and proper installation techniques. Topics include reading and evaluating blueprints, and working with traditional hand and power tools. Also covers roof shingle selection and installation, proper insulation techniques, selection and installation of interior finishes, and finish carpentry skills. Lab activities examine roofing, drywall, insulation, door and window installation, and finish flooring. Course utilizes digital resources to research materials and building codes.

Prerequisites:.. ACT 124

BCT	Business and Computer Technology Division	
C	Credit for Prior College-level Learning	
COM	Communications Division	
COU	Counseling Division	
IT	Industrial Technology Division	
HS	Health Sciences Division	
MS	Math and Science Division	
SSAF	Social Science, Arts, and Fitness Division	

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ACT-228: Visual Communications 2　　IT　C

Credit Hours:..4.00

Contact Hours:..5.00

Presents various digital rendering and animation techniques. Explores multiple software applications for rendering, animation, and graphic production including: 3-D Studio Max, Sketchup, and Photoshop. Utilizes software tools to design and assemble a basic portfolio.

Prerequisites:.. None

ACT-233: Commercial Detailing　　IT　C

Credit Hours:..3.00

Contact Hours:..5.00

Explores methods used in developing and drawing details for a commercial building. Details include site, foundation, structural, and wall and roof conditions. Also covers window and door details, commercial stairs, and other typical commercial details. Completion of or concurrent enrollment in ACT 211 is strongly recommended.

Prerequisites:... ACT 150

ACT-246: Construction Estimating　　IT　C

Credit Hours:..4.00

Contact Hours:..5.00

Covers the estimation of residential and commercial construction costs using the quantity survey method. Discusses the importance of using construction documents for accurate construction cost estimating related to material and labor. Course utilizes spreadsheet applications for preparing cost estimating forms for material, labor, and other costs. Construction experience or ACT 141 and MATH 100 are recommended.

Prerequisites:... ACT 101

ACT-260: Commercial Design Development　　IT　C

Credit Hours:..3.00

Contact Hours:..5.00

Explores how to develop a commercial building for an assigned building site and use. Emphasizes the transition from design to construction documents. Covers site planning, design development, and a partial set of construction documents with plans, elevations, sections, and details.

Prerequisites:...ACT 136, ACT 222, and ACT 233

ACT-290: Co-op in Architecture Construction Technology　　IT　C

Credit Hours:..2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:...................................Permission from Career Services Officer or Job Developer in the Office of Career Services.

ACT-297: Special Topics in Architecture/Construction　　IT

Credit Hours:..1.00

Contact Hours:..0.93

Explores selected topics as determined by the academic department and the instructor with emphasis on current Architecture/Construction trends. Specific special topic are announced together with the prerequisites each term. Course can be repeated when different topics are offered, allowing students to earn credit for each different topic. May be used toward fulfilling the specific degree requirements for an associate degree or certificate.

Prerequisites:.. As appropriate

ACT-298: Special Topics in Architecture/Construction　　IT

Credit Hours:..2.00

Contact Hours:..2.00

Explores selected topics as determined by the academic department and the instructor with emphasis on current Architecture/Construction trends. The specific special topic will be announced together with the prerequisites each term. Course can be repeated when different topics are offered, allowing students to earn credit for each different topic. May be used toward fulfilling the specific degree requirements for an associate's degree or certificate.

Prerequisites:.. As appropriate

AH-100: Medical Terminology　　HS

Credit Hours:..4.00

Contact Hours:..4.00

Presents health and disease medical terminology in relation to human structure and function. Introduces key elements in the formation and modification of medical terms which then is applied to specific body systems.

Note: since the textbook for this course presents at an 11th grade reading level, it is strongly recommended that a student have a minimum score of 82 on the Compass Reading Test.

Prerequisites:.. None

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

AH-105: Basic Life Support for Healthcare Providers **HS** **C**

Credit Hours:..0.50

Contact Hours:..0.53

Designed for individuals working in healthcare or for health career and nursing students preparing for their clinical assignments. Course introduces the theory and skills of CPR for victims of all ages. Features ventilation with a barrier device, a bag-mask device, supplemental oxygen, use of automated external defibrillator (AED), and relief of foreign-body airway obstruction. Upon successful completion of the course, including both written and skills testing, the student receives an American Heart Association healthcare provider card (valid for two years).

Prerequisites:... None

AH-116: Interpreting Medical Lab Reports **HS**

Credit Hours:..3.00

Contact Hours:..3.00

For health career and nursing students who need to recognize normal and abnormal values of the commonly used diagnostic tests. Presents values of common medical laboratory diagnostic tests and relates them to the common disorders or diseases.

Prerequisites:... None

AH-120: Pharmacology for Allied Health **HS**

Credit Hours:..3.00

Contact Hours:..3.00

Primarily for students in the health career and/or nursing programs in order to establish a foundation in basic pharmacology. Course presents a rationale for understanding current drug therapy involving the common disorders of the major body systems. Administration and dosage calculations are not components of this course.

Note: AH 100-Medical Terminology or its equivalent is a highly recommended prerequisite for this course.

Prerequisites:.. ENG 131 with a C grade or better

AH-128: Dynamics of Dementia **HS**

Credit Hours:..3.00

Contact Hours:..3.00

Provides insight regarding the progressive disease process of dementia. Focuses on identifying those affected, and recognizing the co-morbidities associated with dementia. Includes learning strategies to approach individuals exhibiting thought or behavioral disturbances related to dementia, and the coordinating of resources with assistance of healthcare providers.

Prerequisites:... None

AH-131: Medico Legal Principles for Health Care Practitioners **HS**

Credit Hours:..3.00

Contact Hours:..3.00

Provides a core foundation of the basic legal issues specific to the health care practitioner. Focuses upon laws related to the delivery of care as well as health care employment issues.

Prerequisites:... None

AH-135: Fundamental Concepts of Cancer and Cancer Care **HS**

Credit Hours:..3.00

Contact Hours:..3.00

Provides a general overview of the fundamental concepts of cancer development, diagnosis, treatment, and prevention.

Note: BIO 131 or equivalent is strongly recommended as a prerequisite for this course.

Prerequisites:..AH 100

AH-141: Introduction to Public Health **HS**

Credit Hours:..3.00

Contact Hours:..3.00

Provides a broad overview of the various aspects of public health in the United States. Presents applications, stakeholders, and methods of public health in a way that allows for the identification of strengths and limitations of the current model of care delivery. Also offers an overview of careers available in the area of public health.

Prerequisites:... None

AH-145: Culture-Sensitive Healthcare **HS**

Credit Hours:..3.00

Contact Hours:..3.00

Assists healthcare providers in understanding the needs, expectations, and behaviors of multicultural patient populations and the barriers to effective patient care. Focuses upon health care practices directly related to the African American, Asian, Hispanic, Middle Eastern, and Eastern European patients.

Prerequisites:... None

BCT — Business and Computer Technology Division
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ANTH-131: Introduction to Anthropology `SSAF`

Credit Hours:..3.00

Contact Hours:..3.00

Introduces physical and cultural anthropology, archaeology, and linguistics. Topics include human evolution, race and human variation, cultural evolution, and the Neolithic. In addition, covers the anthropological concept and various facets of cultures, including religion, economics, myth, social and political organization, kinship, and culture change.

Prerequisites:..ENG 079 eligible

ANTH-151: Cultures of North America `SSAF`

Credit Hours:..3.00

Contact Hours:..3.00

Traces the culture and history of Native Americans from their earliest origins in the New World through the consequences of American colonization. Also addresses current issues that face Native American populations. Several cultures from various regions of North America will be studied in depth through mediums such as ethnography, biography, fiction, and film.

Prerequisites:..ENG 131 eligible

ANTH-152: Middle Eastern Peoples and Cultures `SSAF`

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the richness and variety of Middle Eastern cultures, with an emphasis on Arab culture and the role of Islam in shaping the history and culture of the region. Arabs in the United States and in Dearborn, Michigan, are also examined, as well as American cultural perceptions of Arabs, Islam, and the Middle East.

Prerequisites:..ENG 092 or ENG 093 eligible

ANTH-153: Introduction to Archaeology `SSAF`

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the field of archaeology and provides an overview of world prehistory. Initially explores what archaeologists do, including discussions of excavation, survey, dating techniques, artifact analysis, and cultural interpretation. Then covers what archaeologists have discovered about our ancient human ancestors beginning with our earliest human ancestors and continuing through the development of early state level societies such as those of Ancient Egypt.

Prerequisites:..ENG 092 or 093 eligible

ANTH-154: Food, Culture, and Economy `SSAF`

Credit Hours:..3.00

Contact Hours:..3.00

All people have to eat to live, but food is a cultural celebration that embraces much more than human survival. Explores the rich cross-cultural variety of food traditions and the ways that food in all cultures creates group identity; marks class status and ethnicity; and involves religion, gender, economics, politics, power, and more. Students are introduced to the structure of global food systems in order to better understand the social, cultural, and political implications of US food traditions in relation to those of other cultures.

Prerequisites:..ENG 131 eligible

ARA-130: Pre-Elementary Arabic `COM` `C`

Credit Hours:..3.00

Contact Hours:..3.00

ARA 130 introduces Modern Standard Arabic: the alphabet, vocabulary, pronunciation, grammar, and listening/speaking skills. Covers basic conversational skills and provides exposure to Arabic culture and customs of polite society. NOTE: Not open to native speakers of Arabic, or students with ARA 131 credit or its equivalent.

Prerequisites:... None

ARA-131: Elementary Arabic I `COM` `C`

Credit Hours:..4.00

Contact Hours:..4.00

ARA131 teaches elementary reading, writing, speaking, and listening skills in Modern Standard Arabic, focusing on communication in a cultural context. Covers vocabulary and explores the pronunciation and grammatical principles necessary for comprehending and expressing simple ideas in both spoken and written Modern Standard Arabic.

Prerequisites:... ARA 130 with a grade of C or better OR in one semester of high school Arabic OR instructor permission (Note: A C- grade is not transferrable and is not accepted by some programs at HFC.)

ARA-132: Elementary Arabic II `COM` `C`

Credit Hours:..4.00

Contact Hours:..4.00

ARA 132 further builds reading, writing, speaking, and listening skills in Modern Standard Arabic, focusing on communication in a cultural context. Students continue to expand their knowledge of vocabulary, pronunciation and grammatical principles in order to comprehend and express everyday ideas in both spoken and written Modern Standard Arabic.

Prerequisites:.............................A grade of C or better in ARA 131 or in one year of high school Arabic, or instructor permission (Note: a C- grade is not transferrable and is not accepted by some programs at HFC.)

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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ARA-141: Elementary Arabic Conversation   COM C

Credit Hours:..3.00

Contact Hours:..3.00

An enrichment course, ARA 141 is conducted almost entirely in Arabic and is designed for students wishing to expand their active vocabulary and improve their facility in speaking and listening. Class discussions are based on assigned readings, student reports, and current events. This course is transferable but is not a substitute for a basic language requirement. It may be taken concurrently with Arabic 132, 231 or 232.

Prerequisites:..C grade or better in ARA 131 or in one year of high school Arabic, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ARA-231: Second-Year Arabic III   COM C

Credit Hours:..4.00

Contact Hours:..4.00

ARA 231 follows ARA 132 and is the first of two intermediate-level Modern Standard Arabic courses focusing on communication in a cultural context. Students continue to develop their reading, writing, speaking, and listening skills in Modern Standard Arabic, expand their vocabulary, and deepen their knowledge of pronunciation and grammatical principles in order to comprehend and express essential ideas in both spoken and written Modern Standard Arabic.

Prerequisites:..................A grade of C or better in ARA 132 or in two years of high school Arabic, or instructor permission (Note: a C- grade is not transferrable and is not accepted by some programs at HFC.)

ARA-232: Second-Year Arabic IV   COM C

Credit Hours:..4.00

Contact Hours:..4.00

ARA 232 is the second of two intermediate-level Modern Standard Arabic courses focusing on communication in a cultural context. Students further develop their reading, writing, speaking, and listening skills in Modern Standard Arabic, expand their vocabulary, and deepen their knowledge of pronunciation and grammatical principles in order to comprehend and express a wide range of ideas in both spoken and written Modern Standard Arabic.

Prerequisites:....................................C or better in ARA 231 or in three years of high school Arabic, or instructor permission (Note: a "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ARA-290: Study Abroad in Arabic Language and Culture   COM

Credit Hours:..3.00

Contact Hours:..3.00

ARA 290 takes students to study Arabic language and culture in an Arabic-speaking country under the direction of a member of the Communications Division faculty. Prior to departure, students meet with the instructor for basic language and cultural lessons and to choose an individual topic of research in the area of Arabic language, literature, or culture. While overseas, students put their knowledge of language and culture into practice. On their return, students reflect on their study abroad experience, develop their topic of special interest, and present it in the form of a paper, portfolio, or project. Specific travel information will be announced at least one semester prior to departure.

Prerequisites:...........................A Grade of C or better in ARA 131, 132, 231, or 232 or equivalent or Instructor permission (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC.)

ARA-295: Directed Study in Arabic   COM C

Credit Hours:..1.00

Contact Hours:..0.87

ARA 295 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Arabic language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:...........................A grade of C or better in ARA 131, 132, 231, or 232 or equivalent (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ARA-296: Directed Study in Arabic   COM C

Credit Hours:..2.00

Contact Hours:..0.87

ARA 296 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Arabic language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:...........................A grade of C or better in ARA 131, 132, 231, or 232 or equivalent (Note: C- grade is not transferrable and is not accepted by some programs at HFC)

ARA-297: Directed Study in Arabic   COM C

Credit Hours:..3.00

Contact Hours:..0.87

ARA 297 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Arabic language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:....................................C grade or better in ARA 131, 132, 231, or 232 or equivalent (Note: C- grade is not transferrable and not accepted by some programs at HFC.)

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Courses

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ART-101: Two-Dimensional Design   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Introduces the basic elements and principles of design, a wide range of visual problem solving strategies, and theoretical guidelines regarding two-dimensional composition. Covers a variety of art media and processes, formal art and design vocabulary, and basic color theory.

Prerequisites:..ENG 081 Eligible

ART-102: Drawing I   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

An introductory-level course focusing on the fundamental concepts and skills involved in drawing a range of subject matter from direct observation. Explores line, value, and linear perspective studies in a variety of drawing media.

Prerequisites:..ENG 081 Eligible.

ART-105: Three-Dimensional Design   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Explores design fundamentals, techniques, materials, and principles of organization as applied to three-dimensional art.

Prerequisites:.. None

ART-107: Photoshop   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Provides an introductory-level study of digital imaging with Photoshop.

Prerequisites:.. None

ART-108: Introduction to Animation   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Offers an in-depth study of interactive design and animation using industry standard animation software.

Prerequisites:...ART 107

ART-110: InDesign   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Offers an in-depth study of designing for print using InDesign.

Prerequisites:...ART 107

ART-112: Drawing II   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Stresses drawing fundamentals through working with a variety of subject matter observed firsthand. Covers a variety of drawing media.

Prerequisites:... ART 102 with a "C" grade or better

ART-113: Life Drawing I   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Introduces how to draw the human figure. Discusses proportion and anatomy through direct observation, and explores a variety of media.

Prerequisites:... ART 102 or Instructor permission

ART-114: Graphic Design Studio 1   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Introduces the Adobe Creative Software Suite. Provides a working knowledge of InDesign and Illustrator. Explores the design and development of a variety of media, including multi-page print documents and digital output.

Prerequisites:.....ART 101, ART 102, and ART 107 or Instructor permission

ART-115: Intermediate Perspective   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Emphasizes the application of the theories of linear perspective introduced in ART 102. Discusses how theories are used to create three dimensional illusion through the use of the system of linear perspective.

Prerequisites:..ART 102

ART-116: Painting I   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Explores a broad range of traditional and contemporary approaches to painting.

Prerequisites:...............................ART 101 and 102 or Instructor permission

ART-118: Watercolor I   SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Presents a broad range of techniques in watercolor including both transparent and opaque approaches.

Prerequisites:..ART 101 and 102

ART-119: Art Education for the Elementary Teacher SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

A course for classroom teachers which emphasizes the integration of art into the general classroom procedures to enhance learning. Explores how to develop an understanding of the child's mental and creative growth through art, an awareness of art, and an awareness of art in its various contemporary and cultural contexts.

Prerequisites:.. None

ART-121: Art History Survey I
(Pre-historic to Medieval) SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

A survey of the development of visual arts from the pre-historic to the end of medieval period, covering major civilizations and cultures worldwide. Offers students strong background for understanding the visual art as a vehicle of communication in its functional context. Provides cross-cultural understanding through continuous critical thinking perspective. Enables students to comprehend and interpret works of art by examining the contextual characteristics of the work, its subject, functionality and the culture(s) that produced it. A field trip to a major museum and other appropriate sites is required to strengthen student knowledge.

Prerequisites:...ENG 081 eligible

ART-122: Art History Survey II SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

A survey of the development of visual arts from the early Renaissance to the present time. Offers broad background for understanding the visual art as a vehicle of communication in its functional context. Provides a concise appreciation to the development of socioeconomic, religious and political characteristics of the covered periods. Enables students to acquire a broad scope of cross-cultural understanding through continuous critical thinking perspective. Discusses how to comprehend and interpret works of art by examining the contextual characteristics of the work, its subject, functionality and the culture(s) that produced it. A field trip to a major museum and other appropriate sites is required to strengthen student knowledge.

NOTE: It is recommended that a student who plans to take both ART-121 and ART-122 start with ART-121 first.

Prerequisites:...ENG 081 eligible

ART-123: History of Modern Art SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

A survey of major visual art forms, techniques, styles, movements, and personalities of the nineteenth, and twentieth/twenty-first centuries. Explores architecture, sculpture, painting, printmaking, graphic design, and non-traditional art forms of the modern and post-modern era. Offers broad knowledge for understanding the visual art and its societal function. Presents learning tools to comprehend and interpret works of art by examining the contextual characteristics, subject matter, functionality, and the culture(s) that produced the artwork. A field trip to a major museum and other appropriate art sites is required to strengthen student's knowledge.

Prerequisites:...ENG 081 eligible

ART-130: History of Graphic Design SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Studies the evolution of the letter form, the emergence of type and printing, and the history of design and illustration. Also explores design through the ages and the various contexts in which it developed.

Prerequisites:..ENG 131

ART-135: Art Appreciation SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

A global survey of the development of visual arts through studying major historic civilizations and cultures from the stone age to the present. Explains technical information on the materials, tools, and techniques used to create visual arts in different branches.

Discusses how to interpret works of art by examining the contextual characteristics, the content, functionality and the culture(s) that produced it. Field work at a major museum / art gallery is required to strengthen student's knowledge.

Prerequisites:...ENG 081 eligible

ART-141: Ceramics 1 SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

A beginning course in ceramic materials and form. Covers various hand-building techniques,wheel throwing, basic glazing, and kiln firing.

Prerequisites:...ENG-093 and/or ENG-081 Eligible

BCT   Business and Computer Technology Division
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COU   Counseling Division

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ART-142: Ceramics 2   SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

Emphasizes functional pots and the wheel as the primary technique of construction. Introduces the history of functional ceramics as an idea source for functional designs and includes instruction in kiln stacking and firing.

Prerequisites:..................ART 141 with a "C" grade or higher, or Instructor permission

ART-150: Introduction to Digital Photography   SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

An introductory-level course on the basics of digital imaging where creativity is emphasized. Offers key concepts such as (manual) camera capture, basic file management, 'non-destructive' image processing, and printing which help foster the foundations for visual communications, new media disciplines, or a fine art practice. A student may wait until the first class meeting to make arrangements to buy/use a camera.

ART-165: Typography   SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

Covers typography, typesetting, and layout design including history, anatomy, and use in design. Introduces Adobe Illustrator. Suggested prerequisite: ART 107 Photoshop.

Prerequisites:..ART 101 and 102

ART-172: Color Theory   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Offers an in-depth study of the principles and applications of color. Covers subtractive and additive color systems including traditional paint and computer application.

Prerequisites:..ART 101 and ART107

ART-209: 3-D Animation   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Offers an in-depth study of 3-D graphics using industry standard software. Covers modeling, surfacing, dynamics, animation, and rendering.

Prerequisites:...ART 107

ART-213: Life Drawing II   SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

Provides an advanced exploration of proportion and anatomy through direct observation. Also examines a variety of media.

Prerequisites:...............................ART 113 or Instructor permission

ART-214: Graphic Design Studio 2   SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

Builds on skills developed in ART 114. Covers intermediate design solutions for a variety of media including print and digital using the Adobe Creative Software Suite. Focuses on creating materials for branding.

Prerequisites:...............................ART 114 or Instructor permission

ART-216: Painting II   SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

Explores a broad range of traditional and contemporary approaches to painting.

Prerequisites:.....................ART 101, 102, and 116 or Instructor permission

ART-221: Medieval Art   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

A comprehensive overview of medieval art and architecture from the late antiquity to the late Gothic period in Europe and the Mediterranean region. Discusses the visual art and cultures of about 1000 years (around 400-1400 CE) including Late Roman, Early Christian, Byzantine, Romanesque, Islamic, and Gothic art. Offers diverse perspectives on the development, exchange, interaction, and influence between all these cultures through their visual arts. A field trip to a major museum is required.

Prerequisites:..ENG 081 eligible

ART-224: Art of Islam   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Offers a comprehensive study of the history and development of Islamic art and architecture from its birth in the 7th century CE to the present time. Explains basic characteristics of Islamic art as experienced through major architectural monuments, painting, sculpture, ceramic, calligraphy, and other forms of visual art. Discusses the relationship between the theology of Islam as a faith and its arts. A field trip to a major museum is required.

Prerequisites:..ENG 081 eligible

BCT Business and Computer Technology Division	**IT** Industrial Technology Division
C Credit for Prior College-level Learning	**HS** Health Sciences Division
COM Communications Division	**MS** Math and Science Division
COU Counseling Division	**SSAF** Social Science, Arts, and Fitness Division

ART-225: Asian Art: Art of India and Southeast Asia   SSAF C

Credit Hours:...3.00

Contact Hours:...3.00

Offers a global view on Asian art, culture, and history by exploring the major monuments, traditions, and civilizations of India, China, Japan, Korea, and Southeast Asia. Covers important Asian artists and historical figures, artistic terms, monuments, sites, and time periods. Discusses art and architecture in terms of historical, social, and religious context. Analyzes and distinguishes various styles of art, and examines how and why certain styles are characteristic of specific times and places.

Prerequisites:..ENG 081 eligible

ART-226: African and Afro American Art   SSAF C

Credit Hours:...3.00

Contact Hours:...3.00

Provides a broad overview of the history of visual culture in different regions of continental Africa. Discusses different civilizations, which flourished in different parts of Africa from pre-historic time to the present. Offers study to native spiritual and ritualistic beliefs along with objects associated with and used in these various rituals and involved visual materials such as masks, helmets, costumes, weapons, body art, and other symbolic objects. Discusses African art in the Diaspora with focus on African artists in the Americas and the emerging African American art in North America. A field trip to a major museum is required.

Prerequisites:..ENG 081 eligible

ART-227: History of Arab Art and Architecture   SSAF C

Credit Hours:...3.00

Contact Hours:...3.00

Presents an overview of the art, architecture, culture, and history of the Arab world. Discusses the history and development of Arab visual art and architecture from around 1000 BCE to the present time. Explains the relationship between the artistic forms of Arab art with different religious and political factors as well as the impact of different cultures on the identity of Arab art. A field trip to a major museum is required.

Prerequisites:..ENG 081 eligible

ART-230: Motion Graphics   SSAF C

Credit Hours:...3.00

Contact Hours:...6.00

Introduces the theory and application of motion graphics. Includes pre-visualization techniques, animatics, and video to communicate a message. Utilizes AfterEffects to explore animating graphics.

Prerequisites:......................ART 114 and ART 165 or Instructor permission

ART-234: Topics in Art   SSAF

Credit Hours:...3.00

Contact Hours:...3.00

Provides special study in the area of art, organized by discipline or other criteria. This course may be taken twice for credit, six hours maximum. Specific topics and any prerequisites are listed in the current semester's class schedule or may be obtained through the departmental office.

Prerequisites:...None

ART-242: Ceramics 3   SSAF C

Credit Hours:...3.00

Contact Hours:...6.00

An advanced-level course stressing refinement of ceramic construction techniques and design, kiln stacking, and firing. Also offers the opportunity for individual exploration of ceramic glaze and surface possibilities.

Prerequisites:...................ART 142 with a "C" grade or higher, or Instructor permission

ART-245: Interactive Design   SSAF C

Credit Hours:...3.00

Contact Hours:...6.00

Explains how to use Dreamweaver and offers a review of Photoshop, HTML, and CSS. Explores how to design and produce interactive web designs using Photoshop, HTML, CSS, and Dreamweaver.

Prerequisites:..ART107 and CIS126

ART-250: Intermediate Digital Photography   SSAF

Credit Hours:...3.00

Contact Hours:...6.00

Emphasizes how to refine lighting and post-production techniques. Expands on the concept of aesthetics for seeing, thinking, constructing, and manipulating various photographic forms and meanings.

Prerequisites:...ART 150

ART-255: Animation Basics   SSAF C

Credit Hours:...3.00

Contact Hours:...6.00

Covers how to plan and produce animations and motion graphics from conceptual storyboard through final digital output. Explores character development. Focuses on animation for television, movies, and gaming.

Prerequisites:..ART 102, 107, and 108

BCT — Business and Computer Technology Division
C — Credit for Prior College-level Learning
COM — Communications Division
COU — Counseling Division
IT — Industrial Technology Division
HS — Health Sciences Division
MS — Math and Science Division
SSAF — Social Science, Arts, and Fitness Division

Courses

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ART-261: Intermediate Black and White Photography `SSAF`

Credit Hours:...3.00

Contact Hours:...6.00

Emphasizes how to refine darkroom techniques and the aesthetics of the photographic experience.

Prerequisites:..ART 161

SSAF

ART-265: Illustration `SSAF` `C`

Credit Hours:...3.00

Contact Hours:...6.00

Emphasizes traditional and digital drawing and painting techniques used by illustrators to create commercial illustrations for print and digital media. Presents effective techniques when using Adobe Photoshop and Illustrator.

Prerequisites:............................. ART 107, ART 112 or instructor permission

ART-275: Advanced Projects `SSAF` `C`

Credit Hours:...3.00

Contact Hours:...6.00

Focuses on individualized, advanced projects in the student's area of concentration, one of which is for self-promotion (resume or portfolio).

Prerequisites:...Instructor permission

ART-2901: Directed Study Art History `SSAF` `C`

Credit Hours:...1.00

Contact Hours:...0.93

An individualized advanced-level course study of a topic or project under the direction of a faculty member who, together with the student, designs the format of the study or project. Must have completed the appropriate sequence of courses offered by the department. Course may be taken twice for credit, but subject matter must be different.

ART-2902: Directed Study Art History `SSAF` `C`

Credit Hours:...2.00

Contact Hours:...2.00

An individualized advanced-level course study of a topic or project under the direction of a faculty member who, together with the student, designs the format of the study or project. Must have completed the appropriate sequence of courses to be offered by the department. May be taken twice for credit, and course subject must be different.

ART-290: Study Abroad in Art History `SSAF` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Offers an overseas experience to explore first hand major historical and art works in architecture, sculpture, painting, and other forms of visual arts. Also focuses on original archeological sites complemented by visits to museums, universities, and other cultural sites. Course requires travel to foreign country/countries. Prior to leaving for destination, students must meet in class on campus to receive intensive instruction on the materials of the visit. Specific travel information will be announced at least one semester prior to leaving for the country/countries.

Prerequisites:.. None

ART-2913: Directed Study in Painting `SSAF` `C`

Credit Hours:...3.00

Contact Hours:...3.00

An individualized, advanced-level course conducted under the direction of a faculty member who, together with the student, designs the format of the study or project. Students requesting directed study will have completed the appropriate sequence of courses offered by the department.

Prerequisites:.........................ART 116, ART 216, and Instructor permission

ART-2923: Directed Study in Watercolor `SSAF` `C`

Credit Hours:...3.00

Contact Hours:...3.00

An individualized, advanced-level course study of a topic or project under the direction of a faculty member who, together with the student, designs the format of the study or project. Students requesting directed study will have completed the appropriate sequence of courses offered by the department.

Prerequisites:..ART 101 and ART 102

ART-2933: Directed Study in Drawing `SSAF` `C`

Credit Hours:...3.00

Contact Hours:...3.00

An individualized advance-level course under the direction of a faculty member who, together with the student, designs the format of the study or project. Students requesting directed study are required to complete the appropriate sequence of courses offered by the department.

Prerequisites:..............ART 102, ART 112, ART 113, ART 213, ART 115, and Instructor permission

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

ART-2936: Topics in Studio Art SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

Provides special study in the area of studio art organized by discipline or other criteria. May be taken twice for credit, six hours maximum. Specific topics and any prerequisites are listed in the current semesters class schedule or may be obtained through the departmental office. This studio course meets six hours per week.

Prerequisites:.. None

ART-2953: Advanced Study in Ceramics SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

An individualized advanced-level course study of a topic or project under the direction of a faculty member who, together with the student, designs the format of the study or project. Must have completed the appropriate sequence of courses offered by the department.

Prerequisites:.....................ART-242, "C" or higher, or instructor permission

ASL-130: Deaf Culture and the Deaf Community COM

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the Deaf Culture and the Deaf Community, focusing on its history, traditions, values, and characteristics. Provides a survey of Sign language structure, history, and usage, as well as information about the contributions of Deaf persons to American Society.

ASL-131: Elementary American Sign Language I COM

Credit Hours:..4.00

Contact Hours:..4.00

Develops basic American Sign Language (ASL) skills, focusing on communication in a cultural context. Covers finger spelling, basic vocabulary and grammatical structures, and the development of visual receptive and gestural expressive skills. Designed for students with little or no previous knowledge of ASL.

ASL-132: Elementary American Sign Language II COM

Credit Hours:..4.00

Contact Hours:..4.00

ASL 132 further builds American Sign Language (ASL) skills, focusing on communication in a cultural context. Students expand their knowledge of fingerspelling, vocabulary and grammatical structures, and the development of visual receptive and gestural expressive skills in order to comprehend and express everyday ideas in ASL.

Prerequisites:.....................A grade of C or better in ASL 131 or in one year of high school American Sign Language, or instructor permission

ASL-135: Fingerspelling and Numbering COM

Credit Hours:..2.00

Contact Hours:..2.00

Provides an overview of American Sign Language (ASL) fingerspelling techniques and numbering skills, focusing on improving students' receptive and expressive skills so that students will be able to communicate with speed, dexterity and clarity.

Prerequisites:..............................ASL-131 or in one year of high school ASL, with a C grade or better, or instructor permission

ASL-231: Second-Year American Sign Language III COM

Credit Hours:..4.00

Contact Hours:..4.00

Follows ASL-132 and is the first of two intermediate-level American Sign Language (ASL) courses focusing on communication in a cultural context. Students will further develop their knowledge of fingerspelling, vocabulary and grammatical structures, and expand their visual receptive and gestural expressive skills in order to comprehend and express essential ideas in ASL.

Prerequisites:............................ASL-132 or in two years of high school ASL, with a C grade or better, or instructor permission

ASL-232: Second-Year American Sign Language IV COM

Credit Hours:..4.00

Contact Hours:..4.00

Follows ASL-231 and is the second of two intermediate-level American Sign Language (ASL) courses focusing on communication in a cultural context. Students will further develop their knowledge of fingerspelling, vocabulary and grammatical structures, and expand their visual receptive and gestural expressive skills in order to comprehend and express a wide range of ideas in ASL.

Prerequisites:.........................ASL-231 or in three years of high school ASL, with a C grade or better, or instructor permission

ASTR-131: Descriptive Astronomy MS

Credit Hours:..3.00

Contact Hours:..3.00

Consists of a non-mathematical introduction to elements of the astronomical universe by means of lecture and planetarium demonstrations. Covers the major units of the universe and their interrelation. Scientific background not necessary.

Prerequisites:.. None

Courses

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ASTR-133: Introductory Astronomy Laboratory `MS`

Credit Hours:..1.00

Contact Hours:..1.87

Emphasizes experimental work with the scientific concepts important in astronomy, including planetarium observation and computer simulations of astronomical events. This course combined with ASTR 131 provides the student with a four-hour laboratory science credit. Two hours of laboratory per week.

Prerequisites:.. None

ASTR-231: General Astronomy `MS`

Credit Hours:..3.00

Contact Hours:..3.00

An alternative to and not a continuation of ASTR 131 that offers a more in-depth look at astronomical concepts. Covers light, motions in the sky, gravity, the solar system, stars, galaxies, and cosmology. Recommended prerequisite: one year high-school algebra.

ATMS-131: Weather and Climate `MS`

Credit Hours:..3.00

Contact Hours:..3.00

A non-mathematical introduction to the behavior of the atmosphere and its causes. Topics include atmospheric structure, earth-sun relationships, heat, humidity, clouds, wind, storms, forecasting, pollution, and climate. Offers students without scientific background an interesting look into the atmosphere and weather that surround them.

Prerequisites:.. None

AUTO-101: Automotive Fundamentals `IT`

Credit Hours:..4.00

Contact Hours:..4.00

Provides an introduction to the major automotive systems covered in greater detail in other automotive technology specific system classes. Explores how to perform preventive maintenance routines, such as oil changes, tire rotations on standard systems as well as on vehicles equipped with TPMS (Tire Pressure Monitoring System); brake and suspension system inspections; and how to service the cooling system. This is the only course allowed for Secondary Partnership transfer credit (4 credit hours) from approved high school programs.

Prerequisites:.. None

AUTO-102: Related Technical Automotive `IT`

Credit Hours:..3.00

Contact Hours:..4.00

A course for all ASSET students focusing on the inter-workings of a Ford, Lincoln Mercury or Mazda Dealership. Covers dealer practices of writing warranty reports, work orders, and parts ordering. Introduces general preventative maintenance routines such as oil changes, cooling system service, tire service, and tire pressure monitoring system (TPMS) diagnosis.

Prerequisites:.. None

AUTO-105: Internal Combustion Engines `IT`

Credit Hours:..3.00

Contact Hours:..6.00

Introduces four-stroke engines by exploring principles of operation, compression ratio, piston displacement, operating tolerances, valve timing, horsepower and torque development along with adjustments, inspection, and troubleshooting procedures. Course topics help students prepare for ASE certification exams and State of Michigan licensure, but these exams/licensure are not included in this course. Laboratory activities.

Prerequisites:.. None

AUTO-108: Basic Automotive Electricity `IT`

Credit Hours:..3.00

Contact Hours:..4.00

A study of basic automotive electricity theory and principles. Covers voltage, amperage, Ohm's law, accessories, and lighting as well as series and parallel circuits. Also discusses the various meters that are used in the service of automobiles. Emphasizes circuit diagnosis and troubleshooting.

Prerequisites:.. None

AUTO-110: Automotive Electrical Systems `IT`

Credit Hours:..3.00

Contact Hours:..6.00

A basic automotive electricity and electronics course, including the study of the fundamentals of and operation and service required for batteries, cranking motors, alternators, regulators, and certain accessories used on current-production automobiles. NOTE: Course topics and laboratory experiences help the student prepare for ASE certification and State of Michigan licensure in automotive electrical systems, but certification/license are not included in this course.

Prerequisites:.. None

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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AUTO-120: Automotive Fuel Management Systems `IT`

Credit Hours:..2.00

Contact Hours:..4.00

Introduces the types of fuels and air/fuel ratio requirements of the various fuels used in current automotive engines, along with the construction and operation of fuel delivery systems. Discusses fuel pumps, fuel lines, fuel filters, and storage tanks. Fuel system types include returnable electronic fuel injection, returnless electronic fuel injection, and gasoline direct fuel injection. Also discusses elements of automotive emissions and their control, use of scan tools, PVT, 5-gas analyzer, and DSO and ASE performance tests.

Prerequisites:.. None

AUTO-131: Automotive Ignition Systems `IT`

Credit Hours:..2.00

Contact Hours:..2.00

An intermediate-level course covering the operating principles, construction, troubleshooting and maintenance of units of the automotive ignition system, including distributors, coils, electronic controls and advance mechanisms. Studies ignition timing, wiring, and ignition malfunctions as well as electronic ignition systems and ignition-related emission controls.

Prerequisites:.. None

AUTO-132: Computer Ignition Systems `IT`

Credit Hours:..2.00

Contact Hours:..2.00

An intermediate-level course on computer-controlled ignition systems. Studies systems currently in use as well as newer systems available in the future. Laboratory activities.

Prerequisites:..AUTO 131

AUTO-135: Mathematics for the Technician `IT`

Credit Hours:..3.00

Contact Hours:..0.00

Covers basic mathematics skills specific to the technical field as well as examining measurement aspects beginning with angle and linear measurement, ratios and proportions, basic algebraic expressions, geometry as applied to area and volume calculations, and data and graph analysis.

Prerequisites:.. None

AUTO-140: Automotive Transmissions Systems `IT`

Credit Hours:..3.00

Contact Hours:..6.00

Covers both automatic and manually shifted transmissions and transaxles. Emphasizes the operating principles, construction, adjustments, troubleshooting, and maintenance of both types of transmissions. Also examines clutches, drivelines, rear axles, and differential units.

Prerequisites:.. None

AUTO-142: Electronically Controlled Transmission/Transaxles `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Delves deeper into topics covered in AUTO 140 with additional experiences in the service and repair operations related to the current electronically controlled transaxle units. Emphasizes electronic control systems.

Prerequisites:..AUTO 140 or Instructor permission

AUTO-145: Manual Transmissions and Transaxles `IT`

Credit Hours:..4.00

Contact Hours:..4.00

Explores the theory of operation, construction, diagnosis, maintenance, and service of automobile manual transmissions, transaxles, and clutches. Emphasizes how to disassemble, inspect, and measure various transmissions.

Prerequisites:.. None

AUTO-150: Automotive Diagnosis and Engine Evaluation `IT`

Credit Hours:..2.00

Contact Hours:..4.00

An advanced-level course in the application of diagnosing, locating, and correcting trouble encountered in automotive service, using various types of testing equipment. Engine diagnosis includes variable cam timing and variable displacement engine systems. Electrical diagnosis includes computer-controlled charging systems, battery, and starting systems, including one-touch and remote-start systems. Fuel system diagnosis includes pressure and injector tests using active commands and relative flow analysis. Coursework also explores various common problems that occur in the servicing of the modern automobile.

Prerequisites:..AUTO 100, AUTO 110, AUTO 120, or Instructor permission

AUTO-160: Automotive Chassis Units `IT`

Credit Hours:..2.00

Contact Hours:..4.00

A study of the construction, operation, and maintenance of the various chassis units. Examines steering, suspension systems, and alignment as well as disc and drum braking systems.

Prerequisites:.. None

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AUTO-162: Antilock Brake Systems — IT

Credit Hours:..3.00

Contact Hours:..4.00

Covers the theory and operation of Antilock Brake Systems (ABS) and traction control systems. Includes the design, construction, and types of ABS braking systems. Diagnostic techniques, troubleshooting, and repair of ABS, along with service techniques and hands-on experiences are an integral component of the coursework.

Prerequisites:..AUTO 160

AUTO-165: Electronic Steering and Suspension — IT

Credit Hours:..4.00

Contact Hours:..4.00

Introduces the theory and operation of electronic steering and electronic or active suspension systems. Also covers theory and operation of steering and suspension multiplexing, diagnosis and repair procedures, and alignment concepts. Lab activities are an integral component of the coursework.

Prerequisites:..AUTO 160

AUTO-167: Brake Clinic — IT

Credit Hours:..2.00

Contact Hours:..2.00

Reviews braking systems, including introduction to anti-lock braking systems (ABS), as well as diagnosis and troubleshooting experiences. Recommend prerequisite of AUTO 160.

Prerequisites:..None

AUTO-181: Technical Automotive Welding — IT

Credit Hours:..4.00

Contact Hours:..4.00

An entry-level welding course in electric welding processes and cutting processes relating to the repair and maintenance of the automobile.

Prerequisites:..None

AUTO-187: Automotive Engine Tune-up — IT

Credit Hours:..2.00

Contact Hours:..2.00

Explains how to perform engine tune-up and maintenance procedures. Discusses ignition system operation along with basic computer engine control. Devotes laboratory time to performing actual on-car procedures using appropriate test equipment.

Prerequisites:..None

AUTO-190: Co-op in Automotive Technology — IT C

Credit Hours:..1.00

Contact Hours:..4.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

AUTO-191: Automotive Service Co-op — IT

Credit Hours:..2.00

Contact Hours:..21.20

Designed to offer practical work experience within the Automotive Technology and Service field through participation in a supervised cooperative education program. This course integrates work experience with classroom and Lab instruction.

Prerequisites:.....Requires permission from ASSET Program Coordinator

AUTO-192: Automotive Service Co-op — IT

Credit Hours:..2.00

Contact Hours:..21.20

Designed to offer practical work experience within the Automotive Technology and Service field through participation in a supervised cooperative education program. This course integrates work experience with classroom and lab instruction.

Prerequisites:..........Requires permission of ASSET Program Coordinator

AUTO-215: Automotive Engine Dynamometer — IT

Credit Hours:..2.00

Contact Hours:..2.00

An advanced-level course in the purpose, construction, and operation of the automotive engine dynamometer. Presents how to conduct engine tests of horsepower and torquem, and covers test cell setup of various sensor types and adaptation.

Prerequisites:..AUTO 105, AUTO 120, and AUTO 131 or Instructor permission

AUTO-217: Automotive Alignment Clinic — IT

Credit Hours:..2.00

Contact Hours:..2.00

Examines the types of front and rear suspension systems used on today's vehicles. Emphasizes the inspection, repair, and alignment of a variety of suspension systems.

Prerequisites:..None

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

AUTO-224: Automotive Air Conditioning `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Studies automotive air conditioning systems, including components, functions, and types of service equipment. Also discusses safety protocols and environmental regulations.

Prerequisites:.. None

AUTO-225: Automotive Air Conditioning `IT`

Credit Hours:..2.00

Contact Hours:..2.00

A beginning course covering basic refrigeration and automotive heating, ventilation, air management, and air conditioning systems. Emphasizes identification of systems, diagnosis, repair, and responsible handling of common automotive refrigerants.

Prerequisites:.. None

AUTO-227: Automotive Air Conditioning Clinic `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers automotive air conditioning systems using extensive laboratory activities. Focuses on electronic controls, refrigeration components, and cooling system performance as it applies to the proper diagnostics and repairs of the automotive HVAC system. Covers more controls and auto temp than AUTO 225. Recommended prerequisite AUTO 225.

AUTO-230: Automotive Diesel Principles `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explains the operating principles of the four-stroke diesel engine used in the automobile, including the construction, service, and diagnosis of the various engine systems. Laboratory activities.

Prerequisites:..AUTO 105 or Instructor permission

AUTO-231: Diesel Engine Performance and Diagnosis `IT`

Credit Hours:..4.00

Contact Hours:..4.13

Offers a comprehensive overview of the operating principles of the diesel engine, including the construction, service, and diagnosis of the various engine systems and sub-systems. Covers the latest technological advancements in electronic fuel delivery systems, their diagnosis, and service along with the most recent advances in diesel fuel and Bio-diesel technology. Extensive laboratory activities.

Prerequisites:.. None

AUTO-237: Computerized Engine/Vehicle Emission Control `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explains the operating principles, diagnosis, and laboratory testing of computer controlled fuel management systems. Emphasizes diagnosis and testing with hand-held scanners and on-board digital fault systems. Topics include sensor, actuator, and computer functions in maintaining catalyst stoichiometry. Also covers state test procedures and five-gas analysis as related to computer control. Laboratory activities.

Prerequisites:.. None

AUTO-247: Automotive Emission Controls `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explains the operating principles, diagnosis, and laboratory testing of traditional emission control systems. Topics include positive crankcase ventilation, timing control systems, exhaust gas recirculation, air injection, and two-and three-way catalysts. Also covers tune-up, five-gas analysis, and oscilloscope diagnosis on appropriate vehicle systems.

Prerequisites:.. None

AUTO-260: Alternative Automotive Propulsion Systems `IT`

Credit Hours:..3.00

Contact Hours:..4.00

An intermediate-level course covering alternative automotive propulsion systems that are presently being developed for the automobile transportation industry. Includes theory of operation and service of alternative propulsion systems, with emphasis on safety issues and concerns regarding the servicing of these systems. Also covers hybrid systems (both series and parallel), plug-in hybrids, electric vehicles including battery types, fuel cell vehicles, hydrogen-ICE vehicles, alternative fuels and flex fuel vehicles, and supplemental assist vehicles (capacitive, hydraulic, and inertial units).

Prerequisites:.......................................High School Chemistry or equivalent (recommended) High School Algebra I or equivalent (recommended)

AUTO-267: Small Engines `IT`

Credit Hours:..1.00

Contact Hours:..0.93

Covers two-stroke and four-stroke cycle engines. Examines maintenance issues, diagnosing, testing, and repair of a small engine's ignition, fuel, governor, and mechanical systems.

Prerequisites:.. None

BCT Business and Computer Technology Division   IT Industrial Technology Division
C   Credit for Prior College-level Learning   HS Health Sciences Division
COM Communications Division   MS Math and Science Division
COU Counseling Division   SSAF Social Science, Arts, and Fitness Division

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AUTO-287: Advanced Automotive Tune-up `IT`

Credit Hours:..1.00

Contact Hours:..0.93

Covers operating principles of electronic ignition systems. Topics include high energy systems, control modules, waste spark ignition, and all related ignition components. Diagnosis and testing utilize oscilloscope patterns and hand-held scanners. Also covers performance tuning, special problems, and low-emission tune-ups. Laboratory activities.

Prerequisites:.. None

AUTO-290: Co-op in Automotive Technology `IT` `C`

Credit Hours:..2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:...................................Permission from Career Services Officer or Job Developer in the Office of Career Services

AUTO-291: Automotive Service Co-op `IT`

Credit Hours:..2.00

Contact Hours:.. 21.20

Designed to offer practical work experience within the Automotive Technology and Service field through participation in a supervised cooperative education program. This course integrates work experience with classroom and Lab instruction

Prerequisites:...................... Requires permission from the ASSET Program Coordinator

AUTO-292: Automotive Service Co-op `IT`

Credit Hours:..2.00

Contact Hours:.. 21.20

Offers practical work experience within the automotive technology and service field through participation in a supervised cooperative education program. Integrates work experience with classroom and lab instruction.

Prerequisites:...................................ASSET Program Coordinator permission

AUTO-293: Automotive Technology-Service Experience Laboratory I `IT`

Credit Hours:..4.00

Contact Hours:..8.13

Provides real world work experiences and develops entry-level skills in diagnosis and repair of basic engine service, basic electrical, brake systems, suspension systems, and steering systems. Also covers general preventative maintenance procedures such as oil changes and tire rotation. Laboratory activities.

Prerequisites:..AUTO 105, AUTO 110, and AUTO 160; or Department permission

AUTO-294: Automotive Technology-Service Experience Laboratory II `IT`

Credit Hours:..4.00

Contact Hours:..8.13

Explores diagnosis and repair of major engine service, electrical/electronic systems, fuel/emission systems, ignition/engine control systems, ABS/traction control systems, active suspension systems, manual transmission, automatic transmission, driveline, and HVAC systems.

Prerequisites:.......................... AUTO 105, AUTO 110, AUTO 120, AUTO 150, and AUTO 160; or Department permission

AUTO-297: Special Topics in Automotive Technology `IT`

Credit Hours:..1.00

Contact Hours:..0.93

This course explores selected topics as determined by the academic department and the instructor with emphasis on current automotive technology trends. Specific special topics are announced together with the prerequisites each term. The student can repeat the course when different topics are offered, earning credit for each different topic. This course may be used toward fulfilling the specific degree requirements for an associate degree or certificate.

Prerequisites:.. As appropriate

AUTO-298: Special Topics in Automotive Technology `IT`

Credit Hours:..2.00

Contact Hours:..2.00

This course explores selected topics as determined by the academic department and the instructor with emphasis on current automotive technology trends. Specific special topics are announced together with the prerequisites each term. The student can repeat the course when different topics are offered, earning credit for each different topic. This course may be used toward fulfilling the specific degree requirements for an associate degree or certificate.

Prerequisites:.. As appropriate

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

BAC-110: Practical Accounting   **BCT** **C**

Credit Hours:..4.00

Contact Hours:..4.00

Offers practical knowledge of bookkeeping principles, including small-business accounting practices. Introduces the accounting cycle, the specialized journals employed by merchandising firms, and payroll accounting.

Prerequisites:...................................... MATH-0771, MATH-0772, MATH-0773, AND MATH-0774 OR MATH-074 with a C grade or better (or a Score of 39 on Pre-Algebra COMPASS test) AND ENG-131 Eligible

BAC-112: Bookkeeping   **BCT**

Credit Hours:..4.00

Contact Hours:..4.00

Covers such topics as basic accounting and financial record keeping with an emphasis on small businesses, adjusting entries, correcting entries, payroll, depreciation, and inventory. Emphasizes how to prepare for the Certified Bookkeeper exams offered by the American Institute of Professional Bookkeepers (AIPB). NOTE: Course topics help students prepare for the AIPB exams, but the exams are not included in this course.

Prerequisites:...BAC 110 or BAC 131 - with a C grade or better in either course

BAC-120: Introduction to Payroll Accounting   **BCT**

Credit Hours:..2.00

Contact Hours:..2.00

Presents the calculation of payroll, the completion of payroll taxes, and the preparation of payroll records and reports. Covers the various phases of the Social Security Taxes, Federal Income Taxes, State Income Taxes, and Unemployment Compensation Insurance.

Prerequisites:.......... BAC-110 or BAC-131, both with a "C" grade or better

BAC-131: Introduction to Financial Accounting   **BCT**

Credit Hours:..4.00

Contact Hours:..4.00

Introduces basic financial accounting principles including the accounting cycle; merchandise accounting; income, asset, and liability measurements; and preparation and evaluation of financial statements.

Prerequisites:...................................... MATH-0771, MATH-0772, MATH-0773, AND MATH-0774 OR MATH-074 with a C grade or better (or score of 39 on Pre-Algebra Compass Test) and ENG-131 Eligible

BAC-132: Introduction to Managerial Accounting   **BCT**

Credit Hours:..4.00

Contact Hours:..4.00

Builds on content presented in BAC 131. Covers in-depth financial statement analysis as well as managerial accounting. Also examines cost behavior, cost-volume profit analysis, business planning and accounting controls, and how accounting information is used in managerial decision-making.

Prerequisites:..BAC 131 with a C grade or better

BAC-141: Computerized Accounting - QuickBooks   **BCT** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the QuickBooks computerized-accounting software package. Covers how to design a company's accounting system for financial recordkeeping and how to enter data for the general journal, special journals, accounts receivable, accounts payable, payroll, and inventory.

Prerequisites:.......BAC 110 with a C grade or better OR BAC 131 with a C grade or better OR Instructor permission

BAC-146: Computerized Accounting—Peachtree   **BCT**

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the Peachtree computerized-accounting software package. Discusses how to design a company's accounting system for financial recordkeeping and how to enter data for the general journal, special journals, accounts receivables, accounts payable, payroll, and inventory.

Prerequisites:..................... BAC 131 with a C grade or better OR Instructor permission

BAC-231: Asset Accounting   **BCT**

Credit Hours:..4.00

Contact Hours:..4.00

Provides a detailed study of specialized phases of accounting such as the treatment of cash and temporary investments, receivables, inventories, investments, plant and equipment, intangibles, deferred charges, liabilities, and financial statements.

Prerequisites:..BAC 132 with a C grade or better

BAC-234: Equity Accounting   **BCT**

Credit Hours:..4.00

Contact Hours:..4.00

Offers a detailed study of specialized phases of equity accounting such as the treatment, disclosure, and analysis of debts, income-tax deferrals, treasury stock, revenues, pensions, earnings, dividends, leases, investments, and changes in financial position.

Prerequisites:..................... BAC 231 with a C grade or better OR Instructor permission

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C Credit for Prior College-level Learning
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COU Counseling Division
IT Industrial Technology Division
HS Health Sciences Division
MS Math and Science Division
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BAC-235: Tax Accounting   BCT

Credit Hours:..3.00

Contact Hours:...3.00

Examines the basic application and rationale of the federal income tax law and provides training through specific problem assignments. Emphasizes tax preparation for individuals.

Prerequisites:..BAC 131 with a C grade or better

BAC-262: Cost Accounting   BCT

Credit Hours:..3.00

Contact Hours:...3.00

Explores the process by which companies control and plan the costs of doing business.

Prerequisites:..BAC 132 with a C grade or better

BBA-110: Business Language Skills   BCT C

Credit Hours:..3.00

Contact Hours:...3.00

Emphasizes language skills that are commonly applied to documents constructed or edited in the business environment. Covers business grammar, proofreading skills, and parts of speech in proper context.

Prerequisites:..ENG-081 and ENG-093 Eligible

BBA-131: Introduction to Business   BCT

Credit Hours:..4.00

Contact Hours:...4.00

Presents an integrated examination of the American business system and the operations of business organizations. Covers theories of management and their application, production, operations, marketing, and financial management of firms.

Prerequisites:..ENG-081 and ENG-093 Eligible

BBA-133: Business Behavior and Communication   BCT

Credit Hours:..3.00

Contact Hours:...3.00

Introduces the basics of appropriate behavior and communication in a business environment. Discusses personal, interpersonal, and group behaviors as well as etiquette, culture and gender issues, interview skills, and effective problem solving techniques. Also examines how to use various communication styles in interactions with superiors, peers, subordinates, and clients.

Prerequisites:..ENG-081 and ENG-093 Eligible

BBA-153: Customer Service   BCT

Credit Hours:..3.00

Contact Hours:...3.00

Examines the principal functions of a customer service representative, the skills needed to succeed in the workplace, and the knowledge to advance into a leadership role within the service industry. Emphasizes effective communication skills, positive attitudes, problem solving, strategies for coping with challenging and dissatisfied customers, retention of customers, methods of measuring customer satisfaction, technology and customer service, and motivational techniques. NOTE: Upon successful completion of this course, students may choose to take the exam for National Professional Certification in Customer Service from the National Retail Federation (NRF) Foundation. This exam is not included in this course.

Prerequisites:..ENG-081 and ENG-093 Eligible

BBA-159: Contact Center/Help Desk Practicum   BCT

Credit Hours:..2.00

Contact Hours:...2.00

Presents the components, job roles, and performance factors of today's contact center/help desk. Discusses techniques to handle incoming customer inquires regarding products, services, accounts, and equipment; how to respond to customer inquiries, requests, and complaints; and how to troubleshoot with empathy for the customer, with prompt and courteous service, and professionalism. Course utilizes a call center software package to simulate real-life scenarios.

Prerequisites:..BBA 153, BCA 140 OR CIS 100

BBA-164: Introduction to Industrial Distribution   BCT

Credit Hours:..2.00

Contact Hours:...2.00

Offers an overview of the industrial distribution business model, the role distributors play in the supply chain, and their relationships with suppliers and end-users. Explores topics such as marketing, customer service, and inventory control as they relate to industrial distribution. Also examines the importance of pricing and markup.

Prerequisites:..ENG-081 and ENG-093 Eligible

BBA-170: Contemporary Selling   BCT

Credit Hours:..3.00

Contact Hours:...3.00

Presents the theory of professional selling. Covers topics such as listening and observation, communication skills, problem solving, customer-relationship building, merchandising, assessing customer satisfaction, and utilizing current technologies to enhance sales.

Prerequisites:...None

Courses

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BBA-231: Business Office Communications **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Examines written, oral, and listening skills as used in a business environment with a major focus on how to properly construct and edit both internal and external documents. Presents proven theories to utilize principles and styles of effective written communication to analyze case studies; to create appropriate documents; and to compose business letters, memos, and employment-related documents. Methods to develop proper planning, organizing, and outlining skills are presented.

Prerequisites:...................................BBA 110 with a C grade or better

BBA-235: Office Administration Practicum **BCT** **C**

Credit Hours:...4.00

Contact Hours:..4.00

Covers records management, telephone techniques, processing of mail, basic banking and accounting procedures, effective written communication skills and public relations, meeting and conference planning, and travel arrangements.

Prerequisites:..BCA 143 with a C grade or better and BCA 145 with a C grade or better

BBA-250: International Business **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Focuses on the risks and opportunities of conducting business in the global economy. Examines the cultural, country, currency, and commercial risks associated with international trade. Also discusses international theory; ethics; political, economic, and legal systems; government intervention; currency fluctuations; foreign market assessment; and market strategies in the global marketplace.

Prerequisites:.......... BBA 131 (C grade or better) or Instructor permission

BBA-252: Principles of Marketing **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Focuses on marketing functions and institutions, the policies of marketing agencies, and current marketing channels. Also covers the retailing and wholesaling of consumer goods and raw materials, pricing policies and practices, anti-competitive practices, recent governmental activities affecting marketing, and the individual creation of a marketing plan.

Prerequisites:... BBA-131 with a C grade or better AND ENG-131 Eligible

BBA-290: Study Abroad in International Business **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Prepares students for success in a rapidly changing, diverse, and global environment by travel to a foreign country/countries to observe business and cultural protocols and the political, legal, and economic issues of doing business in that foreign country/countries. Prior to leaving for the country/countries, Instructor facilitates a mandatory student discussion involving current events and news pertaining to the selected country/countries. Once students are in the country/countries, emphasis will be on business, manufacturing and service, culture, and other influences on United States businesses operating in the visited country/countries. Specific travel information will be announced at least one semester prior to leaving for the country/countries.

Prerequisites:...BBA 131 or Instructor permission

BCA-090: Basic Elements of Computers and Software **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

A developmental course in the use of computers and computer software designed for students with little or no computer experience. Provides interactive, hands-on experience by including use of online and computer-based tutorials, videos, and activities. Focuses on how to become comfortable with computers in order to be successful in BCA140 and other college courses that require computer usage. This course does not meet the General Education requirements for computer literacy, and the credits for this course will not fulfill graduation requirements. Utilizes a version of Microsoft Office and Windows.

BCA-101: Computer Keyboarding **BCT** **C**

Credit Hours:...3.00

Contact Hours:..3.00

Teaches touch keyboarding skills. Covers the alpha, number, and symbol keys; terminology; and basic formatting. Emphasizes accuracy and speed as the semester progresses.

BCA-125: Introduction to the Internet and Web Pages **BCT** **C**

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the Internet and the creation and design of web pages with the focus on maintenance and modification of web pages. Covers popular Internet topics such as communicating online, portals, research and reference tools, and shopping sites. Uses Web-page software to design and create web pages.

Prerequisites:....................................Completion of any HFC BCA or CIS class OR Completion of a high school computing course AND ENG-081 Eligible

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BCA-140: Software Applications `BCT` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Covers the fundamentals of computer literacy with an emphasis on software usage. Offers hands-on training in Microsoft Office including word processing, spreadsheet, and presentation software.

Prerequisites:.. Ability to type 25 words a minute

BCA-143: Word Processing `BCT` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Presents the essential features of Microsoft Word and word processing in preparing and editing documents. Examines how to enhance and customize documents by applying formatting; creating headers and footers; working with columns; inserting page and section breaks; applying themes; inserting hyperlinks; adding graphical elements; and creating footnotes, endnotes, citations, and bibliographies. Also focuses on how to create tables, merge documents, use styles, and prepare and protect shared documents.

Prerequisites:...BCA-140 with a C grade or better OR CIS-100 with a C grade or better AND ENG 081 Eligible

BCA-145: Spreadsheets `BCT` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Covers the essential features of Microsoft Excel and spreadsheets to prepare and format worksheets. Examines how to insert formulas and functions, create charts and diagrams, insert graphical elements, create and modify tables, perform advanced formatting and functions, track changes, protect and share worksheets, import and export data, and interpret and integrate data.

Prerequisites:.........................BCA-140 with a C grade or better OR CIS-100 with a C grade or better AND ENG 081 Eligible

BCA-147: Database Applications `BCT` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Explores the essential features of Microsoft Access and databases. Studies how to create and modify databases, create queries and forms, create reports and charts, add graphics to forms and reports, import and export data, create macros and command buttons to run macros, and integrate databases.

Prerequisites:.........................BCA-140 with a C grade or better OR CIS-100 with a C grade or better AND ENG-081 Eligible

BCA-152: Presentation Software `BCT` `C`

Credit Hours:...2.00

Contact Hours:...2.00

Presents the essential features of Microsoft PowerPoint and presentations. Covers how to create and modify a PowerPoint presentation; add and format visual elements such as SmartArt, WordArt, tables, and charts; import data; add animation effects; customize the layout of slides; apply backgrounds; add speaker notes; copy slides between presentations; create photo albums; and share presentations.

Prerequisites:........................BCA-140 with a C grade or better OR CIS-100 with a C grade or better AND ENG-081 Eligible

BCA-165: Microsoft Project Software for Business Solutions `BCT`

Credit Hours:...2.00

Contact Hours:...2.00

Introduces the basics of using Microsoft Project to help manage projects and to keep track of deadlines, resources, task distribution, constraints, and contingencies. Emphasizes how to set up a project and how to use the software to accomplish tasks in the most efficient manner.

Prerequisites:........................BCA 140 with a C grade or better OR CIS 100 with a C grade or better OR Instructor permission

BCO-190: Co-op in Business `BCT` `C`

Credit Hours:...1.00

Contact Hours:...4.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:..................................Permission from Career Services Officer or Job Developer in the Office of Career Services

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BCO-191: Co-op in Business   **BCT** **C**

Credit Hours:... 1.00

Contact Hours:..4.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:....................................Permission from Career Services Officer or Job Developer in the Office of Career Services

BCO-290: Co-op in Business   **BCT** **C**

Credit Hours:...2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:....................................Permission from Career Services Officer or Job Developer in the Office of Career Services

BEC-133: Basic Economics   **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Offers an overview of macroeconomics and microeconomics. Discusses markets, supply and demand equilibrium, firm decision making, aggregate output, monetary and fiscal policy, and the principles of international trade.

BEC-151: Principles of Macroeconomics   **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Examines the theoretical operation of the economy as a whole. Covers the elements of a free market system, the measurement of macroeconomic performance, the creation and control of money, alternative models of government intervention to impact business cycles, economic growth, and international trade.

Prerequisites:... ENG-131 Eligible

BEC-152: Principles of Microeconomics   **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Examines how decision makers address the central economic problem of scarcity through markets and other mechanisms. Covers price theory, the elements of a market system, consumer behavior, production theory, market structures, labor markets, market imperfections, and government intervention.

Prerequisites:... ENG-131 Eligible

BFN-130: Principles of Investing   **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the principles of investing by examining the security selection process. Covers an examination of cash equivalent, debt, and equity asset classes as well as other investment options. Discusses how to select securities and mutual funds to build investment portfolios; the mechanics involved with setting up accounts; the buying and selling of securities; tax consequences; and the psychology of investing.

BFN-141: Personal Finance   **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Examines common financial concerns such as budgeting, obtaining and managing credit, buying insurance, planning for taxes, purchasing a car and/or home, and saving for retirement. Discusses stocks, bonds, and mutual funds. Also provides information on career planning and employee benefits.

BFN-253: Principles of Finance   **BCT**

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the fundamentals of financial management, financial statements, time value of money, interest rates, and stocks and bonds. Also examines capital budgeting models, cash flow analysis, working capital management, financial ratio analysis, and firm performance.

Prerequisites:......................................BAC 131 with a C grade or better AND BBA 131 with a C grade or better

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BIO-110: Biotechnology and Human Affairs MS

Credit Hours:..4.00

Contact Hours:..4.00

Introduces biotechnology concepts to the general education student. Investigates the science of biotechnology and its applications in fields of human endeavor, and the ethical implications of this rapidly-expanding technology. Topics include crime scene forensics, genetically modified organisms, stem cell research, gene therapy, medical diagnosis and genetic screening, and bioterrorism, among others. Especially relevant for non-scientists interested in medicine, law, journalism, or education. Integrated lecture and lab gives students the opportunity to have hands-on experience in biotechnology techniques.

Prerequisites:... ENG-131 Eligible

BIO-130: Evolution and Behavior MS

Credit Hours:..4.00

Contact Hours:..4.00

Introduces principles of evolution and animal behavior (including human). Considers genetic, physiological, and evolutionary explanations of behaviors. Topics include evolution and natural selection, genetic inheritance, DNA structure and function, basic cell structure and function, innate behaviors, learning, motivation, communication, aggression, sexual behavior, territoriality, play, vestigial behaviors, selfishness, and altruism.

Prerequisites:... None

BIO-131: Introduction to Biology MS C

Credit Hours:..4.00

Contact Hours:..6.00

Explores various aspects of living systems, including cell biology, genetics, evolution, plant and animal diversity, structure and function relationships, ecology, biodiversity, and conservation. Introduces the application of scientific thinking to everyday life. Three hours of lecture and three hours of lab per week.

Prerequisites:... ENG-131 Eligible

BIO-134: Essentials of Anatomy and Physiology MS

Credit Hours:..5.00

Contact Hours:..6.00

A comprehensive study of all body systems in the time-frame of a one-semester course. Emphasizes how anatomy, chemistry, and cell biology all permit the specific functioning of organs and systems. BIO 134 does not substitute for the BIO 233/234 sequence required by HFC's Nursing, Respiratory Therapist, Surgical Technologist, Radiographer, and Physical Therapist programs. Four hours of lecture and two hours of lab per week.

Prerequisites:... None

BIO-135: Microbiology for the Allied Health Sciences MS

Credit Hours:..4.00

Contact Hours:..5.00

For health service personnel not needing the extensive laboratory experience involved in BIO 251. Emphasizes the biology of microbes, epidemiology and disease transmission, sterile technique, basics of immunity, the microbiology of wounds, and current regulations regarding blood-borne pathogens and bio-hazardous wastes. Three hours of lecture and two hours of lab per week.

Prerequisites:... ENG-131 Eligible

BIO-138: Environmental Science Lecture MS C

Credit Hours:..3.00

Contact Hours:..3.00

Explores environmental science, an interdisciplinary study which combines ideas and information from the natural sciences (such as biology, chemistry, and geology) and the social sciences (such as economics, politics, and ethics) to present a general idea of how nature works and how everything in nature is interconnected. Emphasizes human modification of natural systems and strategies for promoting environmental health. Also discusses current environmental concerns.

Prerequisites:... ENG-131 Eligible

BIO-139: Environmental Science Laboratory MS

Credit Hours:..2.00

Contact Hours:..2.87

Current environmental concerns are investigated. Included are field trips to local sites during the lab period. Particular focus will be given to the Rogue River watershed. This course meets once a week for three hours of lab work.

Prerequisites:... ENG-131 Eligible

BIO-143: Zoology MS

Credit Hours:..4.00

Contact Hours:..6.00

Examines the structure and function of various animal groups. Emphasis is on the taxonomic relationships, evolution, embryology and natural history of the major animal groups, from the single-celled protozoa to the vertebrates. Lecture and lab work are coordinated. Three hours of lecture and three hours of lab per week.

Prerequisites:................. BIO 131 or BIO 150 or BIO 152, with a C or better

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BIO-150: Biology: Organisms, Genes, and Ecology — MS

Credit Hours:..4.00

Contact Hours:...6.00

Covers introductory biology concepts. Course is designed to meet the needs of students interested in transferring to four-year institutions and majoring in biological sciences or related fields, as well as students interested in entering programs in pharmacy, medicine, veterinary medicine, dentistry, and related areas. Lectures focus on the nature of science, the diversity and the unity of life, evolution, inheritance, ecology, plant structure, animal physiology, and animal development. Laboratory investigations enhance student learning of cognitive and laboratory skills and provide experience with model organisms used in many areas of biological research. Three hours of lecture and three hours of lab per week.

Prerequisites:......................................College preparatory-level high school biology with a grade of B or better or BIO-131 or BIO-152, with a grade of C or better or permission of instructor. ENG-131 Eligible

BIO-152: Cells and Molecular Biology — MS

Credit Hours:..4.00

Contact Hours:...6.00

One semester of a two-semester sequence in introductory biology, designed to meet the needs of students interested in transferring to a four-year institution with a major or minor in biology, including pre-pharmacy, pre-medical, and pre-dental programs. Lectures focus on the diversity and unity of patterns of living organisms from the perspectives of molecular and cell biology. Laboratory experiments and investigations enhance student learning of cognitive and laboratory skills. Three hours of lecture and three hours of lab per week.

Prerequisites:..ENG-131 eligible and college preparatory biology with a grade of B or better, or BIO-131 or BIO-150 with a C or better and CHEM-131 or CHEM-141 with a grade of C or better (CHEM-141 recommended for biology majors)

BIO-233: Anatomy and Physiology I — MS

Credit Hours:..4.00

Contact Hours:...5.00

Covers the principles and underlying concepts of chemistry, cell biology, histology, articulations, bones, muscles, and the nervous system. Labs reinforce these lecture units. BIO 233 and BIO 234 are a two-semester sequence designed for the student who plans to pursue a career in a health field. Three hours of lecture and two hours of lab per week.

Prerequisites:..BIO-131 or BIO-150 or BIO-152 or the equivalent, with a grade of C or better and ENG-131 Eligible

BIO-234: Anatomy and Physiology II — MS

Credit Hours:..4.00

Contact Hours:...5.00

Covers special senses, endocrine, circulatory, lymphatic, immunity, respiratory and digestive systems, metabolism and energetics, urinary system, fluid, electrolyte and acid/base balance, and the reproductive system. Labs are sequenced with lecture and reinforce the lecture content. Three hours of lecture and two hours of lab per week.

Prerequisites:..........BIO 233 at HFC with a C grade or better or Instructor permission

BIO-251: Microbiology — MS

Credit Hours:..5.00

Contact Hours:...8.00

Introduces microbes and their activities. Covers a wide range of material in lecture and laboratory exercises, including structure and function of diverse microbes, nutrition, growth, metabolism, microbial genetics, and the role of microbes in disease, immunity, and other selected applied areas. Emphasizes the biology of microbes and their interaction with humans and the environment, and in learning the techniques used to safely work with bacteria, viruses, and fungi. Recommended for students anticipating further study in biological or biomedical sciences. Three hours of lecture and five hours of lab each week.

Prerequisites:...ENG-131, BIO-131 or BIO-150 or BIO-152 Eligible (or the equivalent), with a C grade or better; CHEM 131 or higher (CHEM 141 recommended) with a grade of C or better

BIO-261: Nucleic Acids — MS

Credit Hours:..5.00

Contact Hours:...7.00

Focuses on the structure and function of nucleic acids along with chemical and physical techniques commonly used when working with these molecules. Also emphasizes the principles and applications of modern biochemical analyses used in biotechnology and related genomic fields. Course satisfies the requirements of the Biotechnology program; a C grade or better is required to satisfy the requirements of the Biotechnology program. Seven hours of integrated lecture and laboratory per week.

Prerequisites:...................CHEM-141 and BIO-152 with C grades or better

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BIO-262: Proteins `MS`

Credit Hours:..5.00

Contact Hours:...7.00

Focuses on the structure and function of proteins along with chemical and physical techniques commonly used when working with these molecules. Lectures and laboratories emphasize the principles and applications of modern biochemical analyses used in biotechnology and related proteomic fields. This course is designed to satisfy the requirements of the Biotechnology Program; a grade of C or better is required to satisfy the requirements of the Biotechnology Program. Seven hours of integrated lecture and laboratory per week.

Prerequisites:...............CHEM-141 and BIO-152 with grades of C or better

BIO-263: Biotechnology Internship `MS` `C`

Credit Hours:..1.00

Contact Hours:...7.87

A minimum 120 hour unpaid internship experience in a biotechnology laboratory designed to provide the student with an off-campus experience in an actual work environment and to facilitate future employment possibilities. The intern may work in one or a variety of tasks and positions, depending on the student's background and interests, and defined by competency goals agreed upon by the sponsoring laboratory and HFC Biotechnology Faculty. This course is designed to satisfy the requirements of the Biotechnology Program.

Prerequisites:....................Completion of BIO 261, BIO 262, and CHEM 151 with grades of C or better, demonstrated competence in laboratory skills, admission to the Biotechnology Program, and permission of the Director of the Biotechnology Program.

BLW-253: Business Law and the Legal Environment `BCT`

Credit Hours:..4.00

Contact Hours:...4.00

Examines a variety of legal topics including the American Legal System, the laws of contracts, commercial transactions, business organizations, and torts. Focuses on understanding the legal environment in which businesses function. Covers how to research, analyze, and present a legal conflict in oral or written form.

Prerequisites:.. ENG 131 with a C grade or better

BMA-110: Business Math `BCT` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Presents basic math problems from a business person's point of view. Coursework offers a short review of addition, subtraction, multiplication, and division principles, and then moves onto decimals, percentages, fractions, and the relationships among them. Also covers payroll, discounts, markup, interest, loans, and depreciation.

Prerequisites:......................................MATH-0771, MATH-0772, MATH-0773, AND MATH-0774 OR MATH-074 with a C grade or better (or a score of 39 on Pre-Algebra COMPASS test) and ENG-081 Eligible

BSC-110: Introduction to Supply Chain Management `BCT` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Introduces Supply Chain Management (SCM) to individuals with no prior knowledge in SCM and incumbent workers interested in learning and entering the field of SCM as a frontline worker. Upon successful completion of this course, students should be able to demonstrate competency in the following areas: global supply chain logistics, the logistics environment, material handling equipment, safety principles, safe material handling and equipment operation, quality control principles, work communication, teamwork and good workplace conduct to solve problems, and computer usage.

NOTE: Course work helps individuals prepare for the Certified Logistics Associate (CLA) examination; however, the exam is not included in this course.

BSC-120: Technical Foundations of Logistics `BCT` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Develops a higher level of knowledge of Supply Chain Management (SCM) for the frontline worker and supervisors in SCM. Upon successful completion of this course, students should be able to demonstrate competency in the following areas: Product Receiving, Product Storage, Order Processing, Packaging and Shipment, Inventory Control, Safe Handling of Hazardous Materials, Evaluation of Transportation Modes, Dispatch and Tracking Operations, and Measurements and Conversion.

NOTE: Course topics help individuals prepare for the Certified Logistics Technician (CLT) examination (after successfully completing the CLA course). The CLT exam is not included in this course.

Prerequisites:.. BSC 110 with a C grade or better

BSC-230: Logistics and Distribution Strategy `BCT` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Focuses on the complexities of logistics and transportation in the field of Supply Chain Management (SCM). Covers the critical link of transportation in SCM, various modes of transportation (air, water, rail, pipeline, road), global transportation planning, execution, and management. Upon successful completion of this course, students should be able demonstrate competency in the following logistical areas: importance of logistics in SCM, information management systems, demand and order management, customer service, inventory control, facility location, warehouse management, packing and materials handling, transportation modes, transportation management, and international logics.

Prerequisites:......................................BBA-131 Introduction to Business with a grade of C or better, or Instructor Permission

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BSC-240: Operations and Supply Chain Management   BCT C

Credit Hours:...3.00

Contact Hours:...3.00

Explores the essential principles of Operations Management in Supply Chain Management (SCM). Emphasizes designing, planning, sourcing, processing, and distributing goods and services in SCM. Upon successful completion of this course, students should be able to demonstrate competency in the following SCM areas: operations and supply chain management, supply chain strategy and design, global supply chain procurement, demand forecasting methods, inventory management, scheduling and production design, lean systems, quality management, and project management.

Prerequisites:....................................BBA-131 Introduction to Business with a grade of C or better, or instructor permission

BSC-250: Purchasing and Supply Chain Management   BCT C

Credit Hours:...3.00

Contact Hours:...3.00

Introduces the critical function in Supply Chain Management (SCM) known as purchasing. Covers purchasing decisions, strategies, procedures, supplier selections, and negotiations. Upon successful completion of this course, students should be able to demonstrate competency in the following areas of SCM: purchasing strategies, legal aspects of purchasing, material management, just-in-time (lean) purchasing, procurement, strategic outsourcing, global sourcing, total quality management, cost and price determination, and bargaining and negotiations.

Prerequisites:...BSC 230 with a C grade or better AND BSC 240 with a C grade or better OR instructor permission

BSC-260: Global Logistics and Supply Chain Management   BCT C

Credit Hours:...3.00

Contact Hours:...3.00

The Capstone of the Supply Chain Management (SCM) program. Upon successful completion of this course, students should be able to demonstrate knowledge in SCM in order to think critically and design SCM strategies necessary to support the firm's global strategic decisions. This course should prepare students for higher-level learning in the field of SCM with emphasis in the following areas: globalization and international trade, supply chain relationships, supply chain strategies, collaborative planning, procurement and ethical standards, information flows and technology, measuring and managing logistic performance, supply chain vulnerabilities, sustainable supply chain systems, reverse logistics, service supply chains, and emerging supply change designs.

Prerequisites:..BSC-120, C grade or better, AND BSC-250, C grade or better, OR instructor permission

CHD-201: Child Development: Introduction to Creative Child Care   SSAF C

Credit Hours:...3.00

Contact Hours:...3.00

The first in a two-course sequence designed to help candidates acquire skills and knowledge for the Child Development Associate (CDA) credential and, is an introduction course to the CDA credentialing process. The CDA is a national performance-based credential awarded by the CDA Council to teachers, caregivers, home visitors, and administrators who work with children from birth to age five. This course will cover the following CDA topics: Safe, Healthy, Learning Environment; Self, Social, Guidance; and Families. Students will get a better understanding of children's developmental stages (from birth-5) and will be able to plan developmentally appropriate activities for young children (including those with special needs).The CDA Professional Portfolio is initiated in this introduction course. This course can be used to satisfy part of the 120 clock hours of instruction required by the CDA Council.

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1a: Knowing and understanding young children's characteristics and needs.

   1b: Knowing and understanding the multiple influences on early development and learning.

2. Building Family and Community Relationships:

   2a: Knowing about and understanding diverse families and communities.

   2b: Supporting and engaging families and communities through respectful, reciprocal relationships.

   2c: Involving families and communities in young children's development and learning.

3. Observing, Documenting, and Assessing to Support Young Children and Families:

   3c: Understanding and practicing responsible assessment to promote positive outcomes for each child.

4. Using Effective Approaches to Connect with Children and Families:

   4a: Knowing, understanding, and using positive relationships.

5. Using Content Knowledge to Build Meaningful Curriculum:

   5a: Understanding content knowledge and resources in academic disciplines.

BCT Business and Computer Technology Division
C Credit for Prior College-level Learning
COM Communications Division
COU Counseling Division

IT Industrial Technology Division
HS Health Sciences Division
MS Math and Science Division
SSAF Social Science, Arts, and Fitness Division

Courses

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CHD-202: Child Development CDA Portfolio/ Assessment Preparation   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

The second in a two-course sequence designed to help candidates acquire skills, knowledge and documentation for the Child Development Associate (CDA) credential. The CDA is a national performance-based credential awarded to teachers, caregivers, home visitors and, administrators, who work with children from birth to age five. This course will cover the following CDA topics: To Advance Physical and Intellectual Competence; Program Management; and to Maintain a Commitment to Professionalism. Students in this course, will finalize their 13 Professional Portfolio resources and 6 competency statements required by the CDA Council. The CDA credentialing process will also be discussed to prepare students for the final steps in the application process. This course can be used to satisfy part of the 120 clock hours of instruction required by the CDA Council.

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1a: Knowing and understanding young children's characteristics and needs.

2. Building Family and Community Relationships:

   2a: Knowing about and understanding diverse families and communities.

   2b: Supporting and engaging families and communities through respectful, reciprocal relationships.

4. Using Effective Approaches to Connect with Children and Families:

   4a: Knowing, understanding, and using positive relationships.

   4b: Knowing, understanding, and using effective approaches, strategies, and tools for early education.

5. Using Content Knowledge to Build Meaningful Curriculum:

   5a: Understanding content knowledge and resources in academic disciplines.

6. Becoming a Professional:

   6a: Identifying and involving oneself with the early childhood field.

   6b: Knowing about and upholding ethical standards and other early childhood professional guidelines.

   6c: Engaging in continuous, collaborative learning to inform practice; using technology effectively with young children, with peers, and as a professional resource.

Prerequisites:...CHD-201

CHD-205: Infant/Toddler Care and Development   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Explores the physical, social, cognitive and emotional environments necessary for quality care of infants and toddlers. Child Development Associate (CDA) functional areas taught in this course are as follows: safety, health, learning environment, infant development, and observing children's behavior as they pertain to infants and toddlers. This course addresses the intellectual development of children when their basic needs are met and when they are educated and cared for in quality settings that support their emotional well-being. This course can be used to satisfy part of the 120 clock hours of instruction required by the CDA Council.

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1a: Knowing and understanding young children's characteristics and needs.

   1b: Knowing and understanding the multiple influences on early development and learning.

2. Building Family and Community Relationships:

   2a: Knowing about and understanding diverse families and communities.

3. Observing, Documenting, and Assessing to Support Young Children and Families:

   3a: Understanding the goals, benefits, and uses of assessment.

   3b: Knowing about and using observation, documentation, and other appropriate assessment tools and approaches.

4. Using Effective Approaches to Connect with Children and Families:

   4a: Knowing, understanding, and using positive relationships.

   4b: Knowing, understanding, and using effective approaches, strategies, and tools for early education.

5. Using Content Knowledge to Build Meaningful Curriculum:

   5a: Understanding content knowledge and resources in academic disciplines.

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Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

CHD-206: Introduction to Preschool Development and Care **SSAF**

Credit Hours:..3.00

Contact Hours:...3.00

Examines the theories and principles of developmentally appropriate practice in early childhood preschool programs and environments. Explores age appropriate programming which promotes physical, cognitive, language, literacy, and creative development in preschool-age early education and care settings. Emphasis is on active involvement of children in concrete experiences. Environments, equipment, routines, and child guidance techniques developmentally appropriate for children ages 3 - 5 are discussed.

Students seeking the Preschool CDA Certification may use this course as a part of the required 120 in class clock hours of instruction.

(Suggested sequence of courses for the Preschool CDA: CHD-201, CHD-202 and CHD-206).

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1a: Knowing and understanding young children's characteristics and needs.

   1b: Knowing and understanding the multiple influences on early development and learning.

   1c: Using developmental knowledge to create healthy, respectful, supportive, and challenging learning environments for young children.

2. Building Family and Community Relationships:

   2a: Knowing about and understanding diverse families and communities.

   2b: Supporting and engaging families and communities through respectful, reciprocal relationships.

3. Observing, Documenting, and Assessing to Support Young Children and Families:

   3a: Understanding the goals, benefits, and uses of assessment.

   3b: Knowing about and using observation, documentation, and other appropriate assessment tools and approaches.

   3c: Understanding and practicing responsible assessment to promote positive outcomes for each child.

4. Using Effective Approaches to Connect with Children and Families:

   4a: Knowing, understanding, and using positive relationships.

   4b: Knowing, understanding, and using effective approaches, strategies, and tools for early education.

5. Using Content Knowledge to Build Meaningful Curriculum:

   5a: Understanding content knowledge and resources in academic disciplines.

Prerequisites:....................CHD-201 or concurrent enrollment in CHD-201

CHD-211: Exploring Early Childhood Programs-Field Experience **SSAF** **C**

Credit Hours:..1.00

Contact Hours:...2.87

Exposes students to various types of early childhood education settings. This 45 clock hour field experience is to be taken concurrently with the corresponding section of CHD 201. Course topics include but are not limited to: Identification and discussion of various early childhood settings, learning through play, providing a safe, healthy, and supportive learning environment, supporting social -emotional development, providing positive guidance, and working with diverse families. Topics and assignments in this course support the NAEYC Standards and MDE Quality Early Childhood Standards.

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1c: Using developmental knowledge to create healthy, respectful, supportive, and challenging learning environments for young children.

2. Building Family and Community Relationships:

   2b: Supporting and engaging families and communities through respectful, reciprocal relationships.

3. Observing, Documenting, and Assessing to Support Young Children and Families:

   3c: Knowing about and using observation, documentation, and other appropriate assessment tools and approaches, including the use of technology in documentation, assessment and data collection.

7. Early Childhood Field Experiences:

   7a: Opportunities to observe and practice in at least two of the three early childhood age groups (birth - age 3, 3-5, 5-8).

   7b: Opportunities to observe and practice in at least two of the three main types of early education settings (early school grades, child care centers and homes, Head Start programs).

*The following documents must be provided before starting this practicum: Department of Human Services (DHS) Clearance; Tuberculosis (TB) test record (must be in the last 12 months); Identification (valid driver's license or State ID); and a HFC student ID card. Some programs may request an immunization, a physical exam and an ICHAT (Criminal Background Check).

Prerequisites:.................................Documents required before starting this practicum are specified in the Catalog Course Description.*

BCT	Business and Computer Technology Division		IT	Industrial Technology Division
C	Credit for Prior College-level Learning		HS	Health Sciences Division
COM	Communications Division		MS	Math and Science Division
COU	Counseling Division		SSAF	Social Science, Arts, and Fitness Division

Courses

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CHD-215: Nurturing Infant & Toddler Relationships-Practicum   SSAF C

Credit Hours:..1.00

Contact Hours:...2.87

Prepares students to work with infants and toddlers in a licensed private, early head start, or in home program setting. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors, and build a comprehensive understanding of children birth-36 months and their families. This 45 clock hour practicum is to be taken concurrently with the corresponding section of CHD 205.

The assignments and topics in this course will be aligned with the Michigan Early Childhood Standards of Quality for Infant and Toddler Programs and the NAEYC Early Childhood Program Standards. Course assignments for CHD 215 will be coordinated between the CHD 215 Instructor and the coordinating teacher. Students will focus on providing nurturing relationships, appropriate curriculum, keeping infants and toddler's safe, family support, and the physical environment.

Students seeking the Infant-Toddler CDA Certification may use the completed 45 practicum hours to help fulfill the required 480 hours working with Infants and Toddlers.

*The following documents must be provided before starting this practicum: Department of Human Services (DHS) Clearance; Tuberculosis (TB) test record (must be in the last 12 months); Identification (valid driver's license or State ID); and a HFC student ID card. Some programs may request an immunization, a physical exam and an ICHAT (Criminal Background Check).

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1c: Use developmental knowledge to create healthy, respectful, supportive, and challenging learning environments for young children.

2. Building Family and Community Relationships:

   2b: Supporting and engaging families and communities through respectful, reciprocal relationships.

   2c: Involving families and communities in young children's development and learning.

3. Observing, Documenting, and Assessing to Support Young Children and Families:

   3c: Knowing about and using observation, documentation, and other appropriate assessment tools and approaches.

   3d: Understanding and practicing responsible assessment to promote positive outcomes for each child.

4. Using Effective Approaches to Connect with Children and Families:

   4c: Using a broad repertoire of developmentally appropriate teaching/learning approaches.

   4d: Reflecting on own practice to promote positive outcomes for each child.

5. Using Content Knowledge to Build Meaningful Curriculum:

   5b: Knowing and using the central concepts, inquiry tools, and structures of content areas or academic disciplines.

   5c: Using own knowledge, appropriate early learning standards, and other resources to design, implement, and evaluate developmentally meaningful and challenging curriculum.

6. Becoming a Professional:

   6b: Knowing about and upholding ethical standards and other early childhood professional guidelines.

   6c: Engaging in continuous, collaborative learning to inform practice; using technology effectively with young children, with peers, and as a professional resource.

   6d: Integrating knowledgeable, reflective, and critical perspectives on early education.

   6e: Engaging in informed advocacy for young children and the early childhood profession.

7. Early Childhood Field Experiences:

   7a: Opportunities to observe and practice in at least two of the three early childhood are groups (birth - age 3, 3-5, 5-8).

   7b: Opportunities to observe and practice in at least two of the three main types of early education settings (early school grades, child care centers and homes, Head Start programs).

Prerequisites:.................................Documents required before starting this practicum are specified in the Catalog Course Description.*

CHD-231: Inquiry-Based Preschool Curriculum   SSAF

Credit Hours:..3.00

Contact Hours:...3.00

Designed for present and future teachers, caregivers, home visitors, administrators, and the general public who participate in decisions relating to early childhood curriculum. This course examines inquiry-based learning and how it relates to a child-centered, integrated preschool curriculum. In this course, students will better understand the importance of inquiry based curriculum in the preschool setting through hands-on experiences in an early childhood classroom, web-theme based lesson planning, and through the demonstration of inquiry based lessons. This course integrates the Michigan Department of Education (MDE) Early Childhood Standards of Quality and the National Association for the Education of Young Children's (NAEYC) position statements and guidelines for instruction into class discussions to help students gain insight into the best practices with young children. This class can be used to satisfy part of the 120 clock hours of instruction required by the CDA Council.

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1b: Knowing and understanding the multiple influences on early development and learning.

3. Observing, Documenting, and Assessing to Support Young Children and Families:

   3a: Understanding the goals, benefits, and uses of assessment.

4. Using Effective Approaches to Connect with Children and Families:

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

4b: Knowing and understanding effective strategies and tools for early education, including appropriate uses of technology.

5. Using Content Knowledge to Build Meaningful Curriculum:

5a: Understanding content knowledge and resources in academic disciplines.

5b: Knowing and using the central concepts, inquiry tools, and structures of content area or academic disciplines.

Prerequisites: ....ENG-132, PSY-152, and CHD-201, grade of C or better

CHD-232: Observation and Assessment in Early Childhood Education   **SSAF** **C**

Credit Hours:...3.00

Contact Hours:...3.00

Examines a variety of formal and informal assessment techniques used in early childhood classrooms. Emphasizes the importance of observing young children and how to use these observations. The Michigan Department of Education (MDE) Early Childhood Standards of Quality (ECSQ) and the National Association for the Education of Young Children (NAEYC) guidelines for assessment will be integrated into class discussions to help students gain insight into the best practices with young children. This course is designed for present and future teachers, caregivers, home visitors, administrators and the general public who participate in decisions relating to early childhood assessment. Students in CHD-232 must enroll concurrently in CHD-233: Observation and Assessment in Early Childhood Education Practicum.

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

1a: Knowing and understanding young children's characteristics and needs.

3. Observing, Documenting, and Assessing to Support Young Children and Families:

3a: Understanding the goals, benefits, and uses of assessment.

3b: Knowing about and using observation, documentation, and other appropriate assessment tools and approaches.

4. Using Effective Approaches to Connect with Children and Families:

4a: Knowing, understanding, and using positive relationships.

4b: Knowing, understanding, and using effective approaches, strategies, and tools for early education.

Prerequisites: ....ENG-132, PSY-152, and CHD-201, grade of C or better

CHD-233: Observation and Assessment in Early Childhood Education Practicum   **SSAF** **C**

Credit Hours:...1.00

Contact Hours:...2.87

During this practicum experience, students will apply knowledge gained from CHD-232. They will observe and engage with young children individually and in small groups in an early childhood classroom. Students will implement activities approved by the lead teacher and use formal and informal assessment techniques with children. Observation strategies and recording objective anecdotal notes will be emphasized. Students will analyze observations individually, with classroom staff and classmates to build relationships with children, determine children's strengths, suggest support activities and for assisting the lead teacher in communicating children's development with families.

*The following documents must be provided before starting this practicum: Department of Human Services (DHS) Clearance; Tuberculosis (TB) test record (must be in the last 12 months); Identification (valid driver's license or State ID); and a HFC student ID card. Some programs may request an immunization, a physical exam and an ICHAT (Criminal Background Check).

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

1c: Using developmental knowledge to create healthy, respectful, supportive, and challenging learning environments for young children.

2. Building Family and Community Relationships:

2c: Involving families and communities in young children's development and learning.

3. Observing, Documenting, and Assessing to Support Young Children and Families:

3c: Knowing about and using observation, documentation, and other appropriate assessment tools and approaches

3d: Understanding and practicing responsible assessment to promote positive outcomes for each child, including the use of assistive technology for children with disabilities.

5. Using Content Knowledge to Build Meaningful Curriculum:

5c: Using own knowledge, appropriate early learning standards, and other resources to design, implement, and evaluate developmentally meaningful and challenging curriculum for each child.

7. Early Childhood Field Experiences

7a: Opportunities to observe and practice in at least two of three early childhood age groups (birth - age 3, 3-5, 5-8).

7b: Opportunities to observe and practice in at least two of the three main types of early education settings (early school grades, child care centers and homes, Head Start program).

Prerequisites: ....ENG-132, PSY-152, and CHD-201, grade of C or better

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
COM	Communications Division	MS	Math and Science Division
COU	Counseling Division	SSAF	Social Science, Arts, and Fitness Division

Courses

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CHD-234: Preschool Curriculum-Practicum SSAF

Credit Hours:..1.00

Contact Hours:..2.87

Prepares students to teach in various types of preschool programs and apply knowledge gained from the Inquiry Based Preschool Curriculum course. This 45 clock hour practicum is to be taken concurrently with the corresponding section of CHD-231.

Under guided supervision, students will demonstrate developmentally appropriate early childhood teaching competencies. Students will use their knowledge of inquiry based curriculum to plan developmentally appropriate lessons. Child centered, play oriented approaches to teaching, learning, assessment, and knowledge of curriculum content areas will be emphasized as students design, implement, and evaluate experiences that promote positive development and learning for preschool children. Integrated curriculum across domains is aligned with the Michigan Department of Education (MDE) Childhood Standards of Quality for Pre-K.

The following MDE Standards of Quality will be covered in this course: Language Development, Literacy, Mathematics, Science, Creative Arts, Social-Emotional Development, Approaches to Learning, and Physical Health and Development. Students seeking the Preschool CDA Certification may use the completed 45 practicum hours to help fulfill the required 480 hours working with preschool children (ages 3-5).

*The following documents must be provided before starting this practicum: Department of Human Services (DHS) Clearance; Tuberculosis (TB) test record (must be in the last 12 months); Identification (valid driver's license or State ID); and a HFC student ID card. Some programs may request an immunization, a physical exam and an ICHAT (Criminal Background Check).

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1c: Using developmental knowledge to create healthy, respectful, supportive, and challenging learning environments for young children.

2. Building Family and Community Relationships:

   2c: Involving families and communities in young children's development and learning.

4. Using Effective Approaches to Connect with Children and Families:

   4c: Using broad repertoire of developmentally appropriate teaching/learning approaches.

   4d: Reflecting on own practice to promote positive outcomes for each child.

5. Using Content Knowledge to Build Meaningful Curriculum:

   5b: Knowing and using the central concepts, inquiry tools, and structures of content areas or academic disciplines.

   5c: Using own knowledge, appropriate early learning standards, and other resources to design, implement, and evaluate developmentally meaningful and challenging curriculum for each child.

7. Early Childhood Experiences

   7a: Opportunities to observe and practice in at least two of the three early childhood age groups (birth - age 3, 3-5, 5-8).

   7b: Opportunities to observe and practice in at least two of the three main types of early education settings (early school grades, child care centers and homes, Head Start programs).

Prerequisites:.................................Documents required before starting this practicum are specified in the Catalog Course Description.*

CHD-241: Developmentally-Appropriate Practices in Child Care Center Administration SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Examines the role of the child care administrator in directing successful early childhood centers in a diverse and democratic society, following developmentally-appropriate practices. Topics include: diversity, policy development, personnel management, ethical decision-making, safety, community resources, childcare licensing regulations, communication strategies, professionalism, and appropriate business practices. Students will focus on critical conditions affecting families and explore ways to utilize school and community resources to develop meaningful home-school-community partnerships. Child Development Associate (CDA) functional areas covered in this course are as follows: Safe, Healthy, Learning Environment, Professionalism, and Program Management. This course can be used to satisfy part of the 120 clock hours of instruction required by the CDA Council. It can also be used as a CDA renewal course.

The following NAEYC Associate Degree Standards are met by this course at the understanding or application level:

1. Promoting Child Development and Learning:

   1a: Knowing and understanding young children's characteristics and needs.

   1b: Knowing and understanding the multiple influences on early development and learning.

2. Building Family and Community Relationships:

   2a: Knowing about and understanding diverse families and communities.

4. Using Effective Approaches to Connect with Children and Families:

   4a: Knowing, understanding, and using positive relationships.

6. Becoming a Professional:

   6a: Identifying and involving oneself with the early childhood field.

   6b: Knowing about and upholding ethical standards and other early childhood professional guidelines.

   6c: Engaging in continuous, collaborative learning to inform practice; using technology effectively with young children, with peers and as a professional resource.

   6d: Integrating knowledgeable, reflective, and critical perspectives on early education.

Prerequisites:................... ENG-131, with a grade of C or better and either CHD-201 with a grade of C or better or a current CDA certificate

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

CHD-242: Language and Literacy Experiences for Young Children: Birth-5   **SSAF** **C**

Credit Hours:...3.00

Contact Hours:...3.00

Explores the principles, methods and materials for teaching young children ages birth-5 years, language and literacy through a play-based, integrated curriculum. A variety of instructional methods are used including, lecture, classroom discussion, videos, small group work, hands on experiences, and individual and group projects. Emphasis is also placed on the influence of a child's cultural/social background and experiences on emergent literacy and development. The NAEYC (student learning outcomes) and MDE Quality Standards are addressed in this course.

The following NAEYC Associate Degree Standards are met in this course at the understanding or application level:

1. Promoting Child Development and Learning:

    1a: Knowing and understanding young children's characteristics and needs.

2. Building Family and Community Relationships:

    2a: Knowing about and understanding diverse families and communities.

4. Using Effective Approaches to Connect with Children and Families:

    4a: Knowing, understanding, and using positive relationships.

    4b: Knowing, understanding, and using effective approaches, strategies, and tools for early education.

5. Using Content Knowledge to Build Meaningful Curriculum:

    5a: Understanding content knowledge and resources in academic disciplines.

    5b: Knowing and using the central concepts, inquiry tools, and structures of content areas or academic disciplines.

Note: This course may be used for CDA renewal or to help fulfill your 120 clock hours of in class instruction.

Prerequisites:.....CHD-201, concurrent enrollment in CHD-201 or a valid CDA Certificate.

CHEM-091: Preparatory Chemistry   **MS**

Credit Hours:...2.00

Contact Hours:...2.00

Explores introductory chemistry. Includes the study of chemical terminology, the periodic table, chemical nomenclature, equation writing, the pH scale, and chemical problem solving. This course is designed for students with no high school chemistry who would benefit from further preparation for the standard general chemistry sequence required in their programs. It satisfies the high school chemistry admission requirement for some Nursing and Health Career programs.

Prerequisites:.. MATH 070 or the equivalent

CHEM-111: Chemical Skills for Pre-Professional Programs   **MS** **C**

Credit Hours:...4.00

Contact Hours:...5.00

Includes the study of dimensional analysis; atomic structure; stoichiometry; molarity; the periodic table; nomenclature; reactions and equations, and properties of gases. This course is for students majoring in science, engineering, mathematics, pharmacy, or other pre-professional programs who would benefit from further preparation for the standard general chemistry sequence required in these programs. May not be used to satisfy elective requirements in the AS in Pre-Professional Chemistry program. Students in other programs should consult with their program advisor about eligibility for use as an elective. Three hours of lecture and two hours of laboratory per week.

Prerequisites:..One year of high school algebra OR MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH-080 OR higher, OR an equivalent score on the math placement test.

CHEM-131: Principles of Chemistry   **MS**

Credit Hours:...4.00

Contact Hours:...5.00

Introduces general inorganic chemistry. Major topics include measurements, atomic structure, bonding, chemical periodicity, stoichiometry, gas laws, solution chemistry, acid/base chemistry, and equilibrium. May meet requirements in Nursing and Health Careers programs. Three hours of lecture and two hours of laboratory per week.

Prerequisites:.............A grade of "C" or better in MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH-080 OR a satisfactory score on the math placement exam.

CHEM-132: Principles of Organic and Biological Chemistry   **MS**

Credit Hours:...4.00

Contact Hours:...6.00

This is the second course in a traditional two-semester General, Organic, and Biochemistry (GOB) sequence. Emphasizes nomenclature and functional group reactivity. Addresses the structure, function and metabolism of lipids, carbohydrates, proteins, and nucleic acids at an introductory level. There are three hours of lecture and three hours of laboratory each week.

Prerequisites:.............................. CHEM 131 or CHEM 141 or the equivalent with a grade of C or better

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
COM	Communications Division	MS	Math and Science Division
COU	Counseling Division	SSAF	Social Science, Arts, and Fitness Division

Courses

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CHEM-141: Principles of General and Inorganic Chemistry I `MS`

Credit Hours:..5.00

Contact Hours:..7.00

Includes the study of atomic structure; stoichiometry, molarity, enthalpy, chemical periodicity, bonding and structure, reactions and equations, and properties of gases. This course is for students majoring in science, engineering, mathematics, pharmacy, or other pre-professional programs. Three hours of lecture and four hours of laboratory per week.

Prerequisites:...(Passing grade on chemistry pretest or CHEM 111 with C grade or better) AND (completion of MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH 080 with a C grade or an equivalent score on the Math placement test).

CHEM-142: Principles of General and Inorganic Chemistry II `MS`

Credit Hours:..5.00

Contact Hours:..7.00

Emphasizes properties of liquids and solutions, reaction rates, chemical equilibria, thermodynamics, electrochemistry, acid/base chemistry, nuclear chemistry and descriptive chemistry of the more common elements (as time allows). Three hours of lecture and four hours of laboratory per week.

Prerequisites:......................................CHEM 141 with a grade of C or better. MATH 175 recommended.

CHEM-151: Chemical Instrumentation and Laboratory Techniques `MS`

Credit Hours:..3.00

Contact Hours:..4.00

Presents fundamentals of chemical laboratory measurements and techniques. Includes collection and interpretation of meaningful data, statistical analysis of data, and documentation; proper use and calibration of glassware; preparation of solutions, including buffers. Emphasizes use and calibration of instruments, including analytical balances, pH meters, conductivity meters, spectrophotometers, and high-performance liquid chromatographs (HPLC). This course is designed to satisfy the requirements of the Biotechnology Program; a grade of C or better is required to satisfy the requirements of the Biotechnology Program. Four hours of integrated lecture and laboratory per week.

Prerequisites:...................................... CHEM 141 with a grade of C or better

CHEM-241: Organic Chemistry I `MS`

Credit Hours:..4.00

Contact Hours:..4.00

Introduces organic chemistry. Emphasizes structural theory, stereochemistry, physical properties, reaction mechanisms, and functional group chemistry. This course covers the first semester of a full year course. Is a lecture course designed to meet the requirements for science majors, pre-professional biology, pre-professional chemistry, as well as premedical, pre-dental, pre-pharmacy, pre-veterinary, and chemical engineering students. Students should check requirements for organic chemistry at their intended transfer institution. Four hours of lecture per week without lab.

Prerequisites:...................................... CHEM 141 with a C grade or better or permission of the instructor

CHEM-242: Organic Chemistry II `MS`

Credit Hours:..4.00

Contact Hours:..4.00

Builds on the concepts introduced in [CHEM-241](/catalog/courses/chem-241). Emphasizes acid-base chemistry, spectroscopy, and retrosynthetic analysis. Reaction mechanisms and physical properties of the following functional groups will be explored: carbonyl chemistry (aldehydes, ketones, and carboxylic acid derivatives); carboxylic acids; amines; carbohydrates; lipids; amino acids, proteins; and nucleotides. This course is designed to meet the requirements for science majors, pre-professional biology, pre-professional chemistry, as well as premedical, pre-dental, pre-pharmacy, veterinary, and chemical engineering students. Four hours of lecture per week without lab.

Prerequisites:......................................CHEM-241 with a grade of C or better.

CHEM-243: Microscale Organic Chemistry Laboratory I `MS`

Credit Hours:..2.00

Contact Hours:..4.00

Microscale glassware and analytical techniques are used to study fundamental organic reactions and the synthesis of organic compounds. Techniques include distillation (simple, fractional, and steam), crystallization, and extraction. Analysis of compounds includes melting points, boiling points, refractive indices, infrared spectroscopy, and chromatography (gas, thin layer, column). Approximately one hour of lecture and three hours of laboratory per week. This meets the Organic Laboratory requirement necessary to enter into Pharmacy, Medical, Dental, and Veterinary schools. Science major transfers will also need to take [CHEM-244](/catalog/courses/chem-244). Approximately one hour of lecture and three hours of lab per week.

Prerequisites:...CHEM-141 or the equivalent and CHEM-241, with a C or better

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CHEM-244: Microscale Organic Chemistry Laboratory II `COM`

Credit Hours:...2.00

Contact Hours:..4.00

Microscale glassware and analytical techniques are used in this follow-up course to CHEM-243. The primary focus of this course is multi-step organic syntheses and proper research techniques. Practical techniques from the previous course will be applied towards the synthesis of a novel polyaromatic hexaphenylbenzene, an antibacterial drug sufanilamide, the flavoring agent cinnamic acid, and the fragrance 2'-bromostyrene. Products will be analyzed (melting point/boiling point, infrared analysis, chromatographic properties (TLC, GC), solubility, refractive index) and compared to literature values to verify their veracity. Research will involve a critical analysis of competitive synthetic methods. The sequence CHEM-241, CHEM-242 (Lecture I and II) and CHEM-243, CHEM-244 (Laboratory I and II) will transfer to all Michigan universities to meet their Organic Chemistry requirements for Science Majors. Approximately one hour of lecture and three hours of lab per week.

Prerequisites:.......................... CHEM-243 and CHEM-242 with a C or better (CHEM-242 can be a co-requisite with instructor's permission)

CHN-130: Pre-Elementary Mandarin Chinese `COM`

Credit Hours:...4.00

Contact Hours:..4.00

Introduces Mandarin Chinese: Chinese characters, Pinyin transcriptions, vocabulary, pronunciation, grammar, and listening/speaking skills. Teaches basic conversational skills and presents Chinese culture and customs of polite society.

Prerequisites:... None

CHN-131: Elementary Mandarin Chinese `COM`

Credit Hours:...4.00

Contact Hours:..4.00

CHN 131 teaches elementary reading, writing, speaking, and listening skills in Mandarin Chinese, focusing on communication in a cultural context. Covers vocabulary and explores the pronunciation and grammatical principles necessary for comprehending and expressing simple ideas in both spoken and written Mandarin Chinese.

Prerequisites:............................A grade of C or better in CHN 130 or in one year of high school Chinese, or instructor permission (Note: a C- grade is not transferrable and is not accepted by some programs at HFC.)

CHN-132: Elementary Mandarin Chinese II `COM`

Credit Hours:...4.00

Contact Hours:..4.00

CHN 132 further builds reading, writing, speaking, and listening skills in Mandarin Chinese, focusing on communication in a cultural context. Students continue to expand their knowledge of vocabulary, pronunciation and grammatical principles in order to comprehend and express everyday ideas in both spoken and written Mandarin Chinese.

Prerequisites:.......................... C grade or better in CHN 131 or in two years of high school Chinese, or instructor permission (Note: a C- grade is not transferable and is not accepted by some programs at HFC.)

CHN-141: Elementary Chinese Conversation `COM`

Credit Hours:...3.00

Contact Hours:..3.00

An enrichment course, CHN 141 is conducted almost entirely in Chinese and is designed for students wishing to expand their active vocabulary and improve their facility in speaking and listening. Class discussions are based on assigned readings, student reports, and current events. This course is transferable but is not a substitute for a basic language requirement. It may be taken concurrently with Chinese 132.

Prerequisites:..............A grade of C or better in CHN 131 or in one year of high school Chinese, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

CHN-290: Study Abroad in Chinese Language and Culture `COM`

Credit Hours:...3.00

Contact Hours:..3.00

CHN 290 takes students to study Chinese language and culture in China under the direction of a member of the Communications Division faculty. Prior to departure, students meet with the instructor for basic language and cultural lessons and to choose an individual topic of research in the area of Chinese language, literature, or culture. While overseas, students put their knowledge of language and culture into practice. On their return, students reflect on their study abroad experience, develop their topic of special interest, and present it in the form of a paper, portfolio, or project. Specific travel information will be announced at least one semester prior to departure.

Prerequisites:....................................A grade of C or better in CHN 130, 131, or 132 or equivalent or Instructor permission (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC.)

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CHN-295: Directed Study in Chinese — COM

Credit Hours:...1.00

Contact Hours:...0.87

CHN 295 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Mandarin Chinese language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:... A grade of C or better in CHN 130, 131, 132 (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC)

CHN-296: Directed Study in Chinese — COM

Credit Hours:...2.00

Contact Hours:...0.87

CHN 296 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Mandarin Chinese language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:....................................A grade of C or better in CHN 130, 131, 132 (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC)

CHN-297: Directed Study in Chinese — COM

Credit Hours:...3.00

Contact Hours:...0.87

CHN 297 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Mandarin Chinese language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:....................................A grade of C or better in CHN 130, 131, 132 (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC)

CIMEL-100: Intro to Basic Electricity — IT C

Credit Hours:...1.00

Contact Hours:...1.43

Introduces the various elements of basic electricity including the identification of electrical symbols as well as interpretation of schematics, cross referencing prints, tracing circuits, interpreting sequential function charts, line drawings and time charts.

Prerequisites:...N/A

CIMEL-101: Instruments — IT C

Credit Hours:...1.00

Contact Hours:...1.43

Introduces electrical measurement instruments, including digital and analog multimeters, clamp-on ammeters, megohmeters, and the oscilloscope. Emphasizes safe measuring techniques. Covers additional devices such as pressure gauges, chart recorders, heat sensors, and chain stretch monitor. Lab activities.

Prerequisites:...CIMEL 100 or Instructor permission

CIMEL-102: Control Circuits and Components — IT C

Credit Hours:...1.00

Contact Hours:...1.43

Introduces control logic components and circuit function. Examines combinational and sequential ladder logic designs with attention to reliability of function. Involves construction of various circuits that demonstrate key component functionality concepts. Introduces troubleshooting using analytical techniques, multimeters, chart recorders, and oscilloscopes.

Prerequisites:...CIMEL 101 or Instructor permission

CIMEL-103: Solid State Devices — IT C

Credit Hours:...1.00

Contact Hours:...1.43

Introduces the basic concepts of solid state devices and applications: semiconductor theory, the operational characteristics of devices such as the diode bipolar junction transistors (BJT) and field effect transistors (FET), polarity, biasing, rectification, and amplification. Introduces the basic DC power supply. Also includes discussion of camera-type vision systems, barcode readers, and laser etchers as common solid state devices found in industry.

Prerequisites:...CIMEL 102 or Instructor permission

CIMEL-104: Controls and Instrumentation— Fundamentals — IT C

Credit Hours:...1.00

Contact Hours:...1.43

Explores soldering techniques and Electromagnetic/Static considerations when handling, replacing, and repairing of electronic components. Also discusses various troubleshooting methodologies.

Prerequisites:...CIMEL 103 or Instructor permission

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CIMEL-105: Sensors and Photoeyes `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Presents common circuits and sensors to perform the measurement of process flow variables such as pressure, level, temperature, flow, and analytic characteristics. Also develops positional sensors.

Prerequisites:..CIMEL 104 or Instructor permission

CIMEL-106: Calibration and Loop Training `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Evaluates the common methods of process control including Proportional/Integral/Derivative (PID) control. Discusses transmitter setup and calibration. Covers how plant prints are evaluated in order to understand P and I diagrams.

Prerequisites:..CIMEL 105 or Instructor permission

CIMEL-107: Final Control Elements `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Explores automation output devices including AC, DC, and servo motors, variable speed drives, relays, motor starters, and sizing of components for various applications.

Prerequisites:..CIMEL 106 or Instructor permission

CIMEL-108: Introduction to PLCs `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Introduces various elements of basic PLCs including the identification of programmable logic control systems as well as overview of PLC system architectures. Provides instruction in basic numbering systems, computer terminology, PLC functions, program structures, and point addressing basics.

Prerequisites:..CIMEL 107 or Instructor permission

CIMEL-109: PLC Hardware and Software `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Introduces memory and project organization within a PLC processor, the installation, wiring and configuration of I/O modules, as well as how to start a new project.

Prerequisites:..CIMEL 108 or Instructor permission

CIMEL-110: Programming PLCs `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Introduces various elements of programming PLC and routines. Illustrates how to program using ladder logic, structured text, sequential function chart, and function block languages.

Prerequisites:..CIMEL 109 or Instructor permission

CIMEL-111: PLC Communication `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Introduces various elements of industrial communications using PLCs. Addresses common types of control communications in an industrial environment. Includes discussion of PLC addressing used in communications.

Prerequisites:..CIMEL 110 or Instructor permission

CIMEL-112: Introduction to Robotics `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Introduces industrial robotic safety standards, historic time line of industrial robots, industrial classification of robots, common industrial applications of robots, basic system components found in industrial robot applications, robotic motion concepts, and common robot terms and definitions used in computer integrated manufacturing (CIM).

Prerequisites:..CIMEL 111 or Instructor permission

CIMEL-113: Programming/Editing Robots `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

Introduces robotic systems and programming. Emphasizes the fundamentals of robot control. Reviews robotic system application, automated system safety, robotic system composition, robotic motion control, fundamental programming commands, and program editing.

Prerequisites:..CIMEL 112 or Instructor permission

CIMEL-114: Robot Maintenance and PM `IT` `C`

Credit Hours:..1.00

Contact Hours:..1.43

For operators, technicians, engineers, or programmers. Examines how to master the preventive maintenance techniques required for a robot and its backup systems.

Prerequisites:..CIMEL 113 or Instructor permission

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CIMEL-115: Error Codes and Troubleshooting   IT   C

Credit Hours:..1.00

Contact Hours:..1.43

Examines the basic recovery procedures needed to interpret robot error codes and perform a safe recovery start-up procedure on robotics equipment.

Prerequisites:...CIMEL 114 or Instructor permission

CIMEL-116: Integration of PLCs and Robots   IT   C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces concepts associated with integrating robotic applications in a PLC-controlled, automated system. Includes discussion of the standard safety and interface signals associated with integrated systems, as well as various types of robotic applications along with the interface signals typically associated with each application. Stresses the programming concepts that support optimizing cycle time.

Prerequisites:...CIMEL 115 or Instructor permission

CIMEL-117: Introduction to Siemens PLCs   IT   C

Credit Hours:..1.00

Contact Hours:..1.43

This first of four courses introduces Siemens Programmable Logic Controllers (PLCs) and explores the application of this technology as applies to automated manufacturing. Introduces the hardware of the system. Also examines the system architecture as it applies to typical plant applications. Discusses how to evaluate basic programming concepts along with memory allocation. Addressing schemes are examined with its relationship to the physical hardware.

Prerequisites:... None

CIMEL-118: Operation and Introduction to Programming of the Siemens Programmable Controller   IT   C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces the operations and basic programming of the Siemens Programmable Controller. Explores detailed hardware configuration. Covers the internal operating system. Defines organization blocks and their relation to the PLC operation. Examines how to develops data types and their implications to addressing and subsequent program usage. Students develop basic programs for machine control.

Prerequisites:...CIMEL 117

CIMEL-119: Siemens PLC Programming   IT   C

Credit Hours:..1.00

Contact Hours:..1.43

This course provide the students with the understanding of the programming elements for the Siemens Programmable Logic Controller. The students will design, enter, run, and debug programs that are typical of automation applications. The students will apply proper usage of the data types within the program and logic elements. The students will connect a programming terminal and learn the functionality of the software.

Prerequisites:...CIMEL 118

CIMEL-120: Siemens Programmable Logic Controller Communications   IT   C

Credit Hours:..1.00

Contact Hours:..1.43

This course develops and understanding of the types of PLC communications found in automated systems. Local and remote I/O are examined with the options available with the Siemens family of products. Interfacing with HMIs (Human-Machine Interface) is also developed and applied in this course. Graphical displays are constructed in lab to demonstrate the typical interfaces found on current applications.

Prerequisites:...CIMEL 119

CIMHP-111: Fundamentals of Fluid Power and Electrohydraulics/Pneumatics   IT   C

Credit Hours:..1.00

Contact Hours:..1.43

Explains the fundamental concepts of fluid power. Covers the principles of fluid power, calculations of physical properties of fluids, and their ability to do work. Introduces the various fluid power components, symbols, and circuits. Introduces troubleshooting of fluid power components and systems with an emphasis on safety.

CIMHP-112: Flow, Directional, and Pressure Control Valves   IT   C

Credit Hours:..1.00

Contact Hours:..1.43

Explains hydraulic and pneumatic directional control, pressure control, and flow control valves.

Prerequisites:...CIMHP 111 or Instructor permission

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CIMHP-113: Pumps, Actuators, and Accumulators IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces the different types of pumps, actuators, and accumulators used in fluid power systems which create flow, change fluid power into mechanical power, and devices that store energy in the system.

Prerequisites:..CIMHP 112 or Instructor permission

CIMHP-114: Reservoirs, Fluids, and Filters IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces functions of hydraulic/pneumatic reservoirs and reservoir components. Addresses properties and requirements for fluids, as well as how filters are used to maintain cleanliness in fluid power systems.

Prerequisites:..CIMHP 113 or Instructor permission

CIMHP-115: Hose, Piping, and Tubing IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces various types of conductors that carry fluid through a system. Focuses on fittings, hose, and steel tubing used in fluid power systems.

Prerequisites:..CIMHP 114 or Instructor permission

CIMHP-116: Electrohydraulics/Pneumatics IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces the fundamentals of electro-fluid power, including basic electrical principles, basic fluid power principles, electro-fluid power limit devices, and common electro-fluid power troubleshooting principles and practices.

Prerequisites:..CIMHP 115 or Instructor permission

CIMHP-117: Systems and System Troubleshooting IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces troubleshooting of hydraulic/pneumatic systems, including tracing out systems, isolating problems, safety testing, and inspecting systems that use combination circuits and combined electro-hydraulic/pneumatic systems.

Prerequisites:..CIMHP 116 or Instructor permission

CIMMT-100: Intro to Machining Operations IT C

Credit Hours:..1.00

Contact Hours:..1.43

Focuses on the safe application of the most common machining procedures and machines used by multi-skilled industrial maintenance technicians.

Prerequisites:..N/A

CIMMT-101: Measuring and Layout Tools IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces measuring and layout tools commonly found in industrial environments. Emphasizes the safe application of the most common tools used by multi-skilled industrial maintenance technicians.

Prerequisites:..CIMMT 100 or Instructor permission

CIMMT-102: Hand and Power Tools IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces safe and effective use of hand and power tools. Emphasizes the application of tools most commonly used by multi-skilled industrial maintenance technicians.

Prerequisites:..CIMMT 101 or Instructor permission

CIMMT-103: Power Saws and Drill Presses IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces safe operation of drill presses, primarily the sensitive drill press. Emphasizes drilling operations most commonly performed by multi-skilled industrial maintenance technicians. Addresses the various types of drilling machines used in industry, their component parts, and associated safety precautions.

Prerequisites:..CIMMT 102 or Instructor permission

CIMMT-104: Engine Lathe Operation IT C

Credit Hours:..1.00

Contact Hours:..1.43

Introduces safe operation of lathes in the area of engine and tool room lathes. Emphasizes the most common lathe operations required by multi-skilled industrial maintenance technicians. Reviews the types of lathes used in industry, their component parts, and associated safety precautions.

Prerequisites:..CIMMT 103 or Instructor permission

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CIMMT-105: Vertical Mill Operations IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces the safe operation of milling machines in the area of vertical milling machines. Emphasizes the most common milling operations required by multi-skilled industrial maintenance technicians. Addresses the various types of milling machines used in industry, their component parts, and associated safety precautions.

Prerequisites:..CIMMT 104 or Instructor permission

CIMPR-100: Drafting Fundamentals IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces the fundamental information in drafting necessary to retrieve read, manipulate, and understand a mechanical part print. Discusses how to identify and analyze different types of prints.

Prerequisites:.. None

CIMPR-101: Orthographic Interpretation IT C

Credit Hours:..1.00

Contact Hours:...1.43

Explores the recognition, identification, description, and relation to the components used in schematics, along with their symbols and connectors, to describe electrical, electronics, pneumatics, hydraulics, and piping circuits, as well as welding and joining symbols interpretation.

Prerequisites:..CIMPR 100 or Instructor permission

CIMTA-100: Basic OSHA Safety IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces OSHA and the OSHA regulations that apply to the auto manufacturing industry.

Prerequisites:.. None

CIMTA-101: First Aid, CPI, and AED IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces how to sustain life and minimize the consequences of injury or sudden illness until advanced medical help arrives on the scene. Includes first aid, CPR, and AED lessons to meet the various training needs of those in workplace, school or community settings.

Prerequisites:.. None

CIMTA-102: Hoists and Cranes IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces the basic concepts and safety rules and issues related to the use of overhead cranes and hoists.

Prerequisites:.. None

CIMTA-103: Rigging Awareness and Fundamentals IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces the basic concepts, safety rules, and issues related to the use of rigging equipment, attachment components, calculating sling angle stresses, and safe lifting and turning loads.

Prerequisites:.. None

CIMTA-104: Basic Preventive Maintenance IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces how routine work is done to keep equipment in good working order and to optimize efficiency and accuracy. Addresses regular routine cleaning, lubricating, testing, intermittent checking for wear and tear, and when to replace components in order to avoid breakdown.

Prerequisites:.. CIMTA 103 or Instructor permission

CIMTA-105: Advanced Technologies IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces various types and styles of predictive and preventive maintenance components, principles, and practices used in industrial applications.

Prerequisites:.. None

CIMTA-106: Basic Mechanical Power Systems IT C

Credit Hours:..1.00

Contact Hours:...1.43

Introduces the basic concepts of mechanical power transmission. Addresses the principles of power transmission, calculations of speed and force, and how they affect a power transmission systems ability to perform work. Emphasizes the basics of mechanical drawing, safe work practices for working around machinery, common hand tools associated with maintenance work, and some of the more common terms and definitions.

Prerequisites:.. None

CIMTA-107: Flexible Drives   **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.43

Introduces various types and styles of flexible belt and chain drives, including V-belts, chains, sprockets, and components.

Prerequisites:.. None

CIMTA-108: Couplings and Alignment   **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.43

Introduces types and functions of couplings used in industrial power transmissions, including how to install, align, and maintain shaft couplings.

Prerequisites:.. None

CIMTA-109: Bearing, Shafts, and Seals   **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.43

Introduces basic types and functions of bearings, shafts and seals found on mechanical drive systems commonly used in industry.

Prerequisites:.. None

CIMTA-110: Brakes and Clutches   **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.43

Introduces various types and styles of braking systems and clutch components used in industrial applications.

Prerequisites:.. None

CIMTA-111: Gears and Cams   **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.43

Introduces various types and styles of gears and cam follower components used in industrial applications.

Prerequisites:.. None

CIMTA-112: System Technology   **IT**

Credit Hours:..1.00

Contact Hours:..1.43

Provides an overview of the technology found in the integrated systems of today's manufacturing facilities. Examines the symbols, functions, and circuits associated with fluid power, electrical, mechanical, control, and communications found in modern integrated systems.

Prerequisites:.. None

CIMWD-100: Weld Joint Design and Preparation (Safety/Joint Design)   **IT** **C**

Credit Hours:..1.00

Contact Hours:..0.93

Covers safety rules for the welding lab and issues such as dealing with ultraviolet rays, burns, fumes, and electrical hazards. Introduces the print symbols and terminology used in fabricating and welding basic joints that are commonly seen on blueprints.

Prerequisites:.. None

CIMWD-101: Weld Joint Design and Preparation (Welding Code, Weld Measurement, and Hand Tools)   **IT** **C**

Credit Hours:..1.00

Contact Hours:..0.93

Introduces welding codes and standards, identification of welding flaws, and the tools used to measure aspects of the weld. Emphasizes safety protocols and proper usage of hand tools in a welding lab.

Prerequisites:.......................................CIMWD 100 or Instructor permission

CIMWD-102: Weld Joint Design and Preparation (Material Cutting, Grinding, and Fabrication)   **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Explores the set-up and use of the Oxy/Fuel cutting torch, the Oxy/Fuel line cutter, Plasma Arc cutting, safety protocols, and proper use of power tools in the welding lab. Also explores how to assemble various weld joints. Laboratory activities.

Prerequisites:.......................................CIMWD 101 or Instructor permission

CIMWD-110: Shielded Metal Arc Welding (Flat and Horizontal Welding)   **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Examines the theory and practical operation of shielded metal arc welding in both a flat and horizontal welding position. Emphasizes safety protocols, machine settings, and filler metals.

Prerequisites:.......................................CIMWD 102 or Instructor permission

CIMWD-111: Shielded Metal Arc Welding (Vertical Welding)   **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Explores the theory and operation of shielded metal arc welding in a vertical welding position.

Prerequisites:.......................................CIMWD 110 or Instructor permission

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CIMWD-112: Shielded Metal Arc Welding (Overhead Welding) IT C

Credit Hours:..1.00
Contact Hours:..1.93

Discusses theory and operation of shielded metal arc welding. Emphasizes safety protocols and working specifically in the overhead welding position.

Prerequisites:.......................................CIMWD 111 or Instructor permission

CIMWD-120: Gas Tungsten Arc Welding (Safety and Technology) IT C

Credit Hours:..1.00
Contact Hours:..0.87

Covers theory and operation of gas tungsten arc welding equipment. Emphasizes safety protocols, machine settings, and filler metals.

Prerequisites:.......................................CIMWD 102 or Instructor permission

CIMWD-121: Gas Tungsten Arc Welding (Steel and Stainless Steel-Flat and Horizontal Welding) IT C

Credit Hours:..1.00
Contact Hours:..1.93

Discusses theory and operation of gas tungsten arc welding. Emphasizes safety protocols, and flat and horizontal welding positions while using mild and stainless steel.

Prerequisites:.......................................CIMWD 120 or Instructor permission

CIMWD-122: Gas Tungsten Arc Welding (Steel and Stainless Steel Vertical) IT C

Credit Hours:..1.00
Contact Hours:..1.93

Covers theory and operation of gas tungsten arc welding. Emphasizes proper safety protocols and vertical welding position using mild steel and stainless steel.

Prerequisites:.......................................CIMWD 121 or Instructor permission

CIMWD-123: Gas Tungsten Arc Welding (Aluminum) IT C

Credit Hours:..1.00
Contact Hours:..1.93

Covers theory and operation of gas tungsten arc welding. Emphasizes safety protocols, flat welding position, horizontal welding position, and vertical welding position using aluminum.

Prerequisites:.......................................CIMWD 122 or Instructor permission

CIMWD-130: Gas Metal Arc Welding (Flat and Horizontal) IT C

Credit Hours:..1.00
Contact Hours:..1.93

Covers theory, machine settings, filler metals, and operation of gas metal arc welding. Emphasizes safety protocols, flat welding position, and horizontal welding position using mild steel.

Prerequisites:.......................................CIMWD 103 or Instructor permission

CIMWD-131: Gas Metal Arc Welding (Vertical and Overhead Welding) IT C

Credit Hours:..1.00
Contact Hours:..1.93

Presents the theory and operation of gas metal arc welding. Emphasizes safety protocols, and proper vertical welding and overhead welding positions using mild steel and aluminum.

Prerequisites:.......................................CIMWD 130 or Instructor permission

CIMWD-140: Weld Metallurgy (Ferrous Metals) IT C

Credit Hours:..1.00
Contact Hours:..0.93

Covers the mechanical and physical properties and the crystalline structures of ferrous metals. Also explores heat treating of ferrous metals.

Prerequisites:.. None

CIMWD-141: Weld Metallurgy (Non-Ferrous Metals) IT C

Credit Hours:..1.00
Contact Hours:..0.93

Examines the mechanical and physical properties, and the crystalline structures of non ferrous metals. Also covers alloying and phase diagrams associated with non-ferrous metals like aluminum and copper.

Prerequisites:.......................................CIMWD 140 or Instructor permission

CIMWD-142: Weld Metallurgy (Weld Testing) IT C

Credit Hours:..1.00
Contact Hours:..1.93

Introduces the destructive and nondestructive testing equipment and procedures used in the evaluation of welds. Covers how to evaluate the results against a welding standard and write a report on those findings.

Prerequisites:.......................................CIMWD 141 or Instructor permission

Courses

BCT	Business and Computer Technology Division
C	Credit for Prior College-level Learning
COM	Communications Division
COU	Counseling Division
IT	Industrial Technology Division
HS	Health Sciences Division
MS	Math and Science Division
SSAF	Social Science, Arts, and Fitness Division

CIMWD-210: Pipe Welding (2G and 5G Welding) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Introduces safety protocols and the proper preparation used to weld pipe. Emphasizes pipe welding in 2G and 5G welding positions.

Prerequisites:...CIMWD 111 or Instructor permission

CIMWD-211: Pipe Welding (6G Welding) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Introduces safety protocols and weld pipe preparation. Focuses on pipe welding in 6G welding position using the shielded metal arc and the gas tungsten arc welding processes.

Prerequisites:...CIMWD 210 or Instructor permission

CIMWD-212: Pipe Welding (Socket and Flange Welding) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Introduces safety protocols and proper weld pipe preparation. Focuses on alignment and pipe welding with socket joints and flange joints.

Prerequisites:...CIMWD 211 or Instructor permission

CIMWD-220: Tool and Die Welding (Technology) **IT** **C**

Credit Hours:..1.00

Contact Hours:..0.93

Covers safety protocols, preparation, and the proper welding techniques used to weld tool steel used in tools and dies.

Prerequisites:.........................CIMWD 111 and 122 or Instructor permission

CIMWD-221: Tool and Die Welding (GTAW) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Introduces safety protocols, proper preparation procedures, and welding techniques used to weld tool steel used in tools and dies. Focuses on using the gas tungsten arc welding (GTAW) process.

Prerequisites:...CIMWD 220 or Instructor permission

CIMWD-222: Tool and Die Welding (SMAW) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Covers safety protocols, preparation procedures, and welding techniques used to weld tool steel used in tools and dies. Focuses on using the shielded metal arc welding process.

Prerequisites:...CIMWD 221 or Instructor permission

CIMWD-230: Shielded Metal Arc Welding AWS Certification (Preparation and Practice) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Covers the proper preparation needed to perform an American Welding Society certification weld.

Prerequisites:...CIMWD 111 or Instructor permission

CIMWD-231: Shielded Metal Arc Welding AWS Certification (Practical) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

For the student who would like to obtain an American Welding Society certification using the Shielded Metal Arc Welding process.

Prerequisites:...CIMWD 230 or Instructor permission

CIMWD-240: Gas Tungsten Arc Welding AWS Certification (Preparation and Practice) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Presents how to perform an American Welding Society certification weld.

Prerequisites:...CIMWD 123 or Instructor permission

CIMWD-241: Gas Tungsten Arc Welding AWS Certification (Practical) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

For the student who would like to obtain an American Welding Society certification using the Gas Tungsten Arc Welding process.

Prerequisites:...CIMWD 240 or Instructor permission

CIMWD-250: Gas Metal Arc Welding AWS Certification (Preparation and Practice) **IT** **C**

Credit Hours:..1.00

Contact Hours:..1.93

Presents how to properly perform an American Welding Society certification weld.

Prerequisites:...CIMWD 131 or Instructor permission

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

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CIMWD-251: Gas Metal Arc Welding AWS Certification (Practical)   IT C

Credit Hours:...1.00

Contact Hours:...1.93

For the student who would like to obtain an American Welding Society certification using the Shielded Metal Arc Welding process.

Prerequisites:...CIMWD 250 or Instructor permission

CIMWD-260: Welding Fabrication Project (Planning and Design)   IT t

Credit Hours:...1.00

Contact Hours:...0.93

This capstone course for the welding technology program emphasizes the critical thinking aspects of developing, designing, and planning a fabrication project.

Prerequisites:...CIMWD 222 or Instructor permission

CIMWD-261: Welding Fabrication Project (Fabricate)   IT

Credit Hours:...1.00

Contact Hours:...1.93

This capstone course for the Welding Technology program emphasizes the critical thinking aspects of cutting, machining, preparation, and welding of a one off fabrication project.

Prerequisites:...CIMWD 260 or Instructor permission

CIMWD-262: Welding Fabrication Project (Assembly)   IT

Credit Hours:...1.00

Contact Hours:...1.93

Serves as one of three capstone courses for the Welding Technology program. Provides the required assessment of knowledge and skills for students in their last semester of course work. Emphasizes critical thinking aspects of the components used in a one off project, the quality control aspect of the project, and the final assembly of the fabrication project.

Prerequisites:...CIMWD 261 or Instructor permission

CIS-100: Introduction to Information Technology   BCT

Credit Hours:...3.00

Contact Hours:...3.00

Survey the field of computer technology and information management. Covers computer hardware, the use of the Internet for communication, e-commerce, information retrieval, the social impact of technology, computer security, networking, and industry-related careers. Also introduces students to the Windows operating system, Internet browsers, e-mail, word processing, spreadsheets, and presentation software using computer laboratory sessions. This course satisfies the HFC Computer Literacy Requirement.

Prerequisites:.. None

CIS-105: Desktop Operating System Concepts   BCT

Credit Hours:...4.00

Contact Hours:...4.00

An introductory-level course focusing on client side desktop operating systems, including installing, using, maintaining, and securing the system. Covers customizing the system, file management, using help, working with applications, Internet connections, file system security, account set-up for multiple users, and for various types of users. Also provides an overview of system configuration, troubleshooting, and system maintenance.

Prerequisites:..CIS-100

CIS-109: Apple Support   BCT

Credit Hours:...3.00

Contact Hours:...3.00

An introductory-level course focusing on using and supporting Apple products with primary emphasis on the Macintosh Operating System (OS), including installing, configuring, using, maintaining, troubleshooting, and securing the system. Demonstrates installing and configuring the Mac OS, working with applications, file management, security, network connections, peripherals, and cross-platform compatibility. Also examines Mobile Apple products and iOS. Suitable for end-users seeking an in-depth knowledge of the Mac OS or help desk specialists/computer technicians who will be supporting Apple products and the Mac OS within an organization.

Prerequisites:.. CIS 100

CIS-111: SQL for Database Development   BCT

Credit Hours:...3.00

Contact Hours:...4.00

An intermediate-level course familiarizing the student with the SQL language used to retrieve and modify tables and data within a SQL Server database management system. Covers outer joins, summary queries, and subqueries. Also discusses using normalization techniques to design and create database structures, views, scripts, stored procedures, scalar functions, and triggers.

Prerequisites:..........CIS 122 or CIS 125 or CIS 130 or CIS 170 or Instructor permission

CIS-112: Introduction to Networking   BCT

Credit Hours:...3.00

Contact Hours:...3.00

An introductory-level course covering the basics of Local and Wide Area Networking. Discusses the OSI model, network protocols, media architecture, and networking hardware. Also covers WANs, remote connectivity, TCP/IP and the Internet as well as how to troubleshoot common network problems.

Prerequisites:.. None

CIS-113: Wireless LANs   BCT

Credit Hours:..2.00

Contact Hours:..2.00

An intermediate-level course covering Wireless Networking. Discusses the IEEE 802.11 standards and the relationship to the OSI model. Also covers the planning, installation, configuration, troubleshooting, and securing of Wireless Networking products.

Prerequisites: .... CIS 112

CIS-114: Introduction to Novell NetWare Administration   BCT

Credit Hours:..3.00

Contact Hours:..4.00

Introduces the basics of Novell NetWare Administration. Presents file system setup, user administration, security configuration, connecting client workstations, eDirectory Services management, system monitoring, and maintenance as well as the configuration of network printing.

Prerequisites:..CIS 112 or CNT 110

CIS-121: Introduction to the Internet   BCT

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the Internet - how it was created, how it works, and its impact on daily life. Presents the resources, services and tools available; such as e-mail, search engines, and directories; Web 2.0 and user-generated content; social and business networks; and e-commerce. Also evaluates ethical and legal implications of the Internet and Web, including how to safeguard themselves and computers from security, malware, and privacy threats.

Prerequisites: .... None

CIS-122: Web Internet Technologies   BCT

Credit Hours:..3.00

Contact Hours:..3.00

An introductory-level course covering website usability, web page authoring, the Internet, networking, and security fundamentals. Skills demonstrated will include beginning Web programming and development in HTML, CSS, and PHP.

Prerequisites: .... None

CIS-123: Web Pages   BCT

Credit Hours:..2.00

Contact Hours:..2.00

A beginning course that explores current web page development techniques and methodologies. Also discusses graphical web development tools, formatting, layout, navigation, database integration, accessibility, and browser compatibility. Includes the development and publishing of a professional website.

Prerequisites: .... None

CIS-124: Introduction to Windows Server Administration   BCT

Credit Hours:..3.00

Contact Hours:..4.00

An introductory-level course that explores the installation and configuration of the Windows Server operating system, connecting client workstations, Active Directory and Server management, system monitoring and maintenance as well as the configuration of network printing.

Prerequisites:..CIS 112 or CNT 110

CIS-125: Principles of Programming Logic   BCT

Credit Hours:..4.00

Contact Hours:..4.00

An introductory-level course presenting programming logic techniques. Emphasizes structured methods of programming. Also covers pseudocode and flowcharting, input/output, selection, loops, arrays, data validation, functions, and modules. A computer lab is used for compilation and testing.

Prerequisites: .... None

CIS-126: HTML/CSS Web Programming   BCT

Credit Hours:..4.00

Contact Hours:..4.00

Covers HyperText Markup Language (HTML) coding practices for both current and future browsers. Uses HTML, Cascading Style Sheets (CSS) extensively, and validates according to the guidelines of the World Wide Web Consortium (W3C). Introduces JavaScript language. Includes the creation and publishing of a website using HTML and CSS.

CIS-129: Introduction to UNIX with Shell Scripting   BCT

Credit Hours:..4.00

Contact Hours:..4.00

An intermediate-level course covering the fundamentals of the UNIX Operating System, including the file system, email, editor, and standard UNIX utilities. Emphasizes how the UNIX shell operates, and also presents advanced forms of utilities, regular expressions, and shell scripts.

Prerequisites: .... CIS 125

CIS-130: C# Programming   BCT

Credit Hours:..3.00

Contact Hours:..4.00

An intermediate programming course using C# for Windows application development. Covers coding and debugging techniques for an object oriented environment. Also creates common Windows form controls used in a graphical user interface application.

Prerequisites:..CIS-125 or Permission of Instructor

BCT	Business and Computer Technology Division		IT	Industrial Technology Division
C	Credit for Prior College-level Learning		HS	Health Sciences Division
COM	Communications Division		MS	Math and Science Division
COU	Counseling Division		SSAF	Social Science, Arts, and Fitness Division

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CIS-132: Active Server Pages.Net Programming `BCT`

Credit Hours:...3.00

Contact Hours:...4.00

An intermediate-level course covering the advanced technologies of a scripting language used for Web programming. Covers multi-page web applications, working with server and validation controls, master pages, and database programming with GridView, DetailsView, and FormView controls.

Prerequisites:... CIS 130

CIS-157: A+ Hardware `BCT` `C`

Credit Hours:...4.00

Contact Hours:...4.00

Explores the hardware section of the CompTIA A+ certification exam in detail. Also covers installation, configuration, and troubleshooting of various hardware. Includes hands-on lab activities with actual hardware components.

Prerequisites:... CIS 100

CIS-158: A+ Operating Systems `BCT` `C`

Credit Hours:...4.00

Contact Hours:...4.00

Explores the software section of the CompTIA A+ certification exam in detail. Covers various operating systems from a PC repair technician perspective, and discusses how the operating system interacts with the PC's hardware, the boot process, troubleshooting, and interaction with application software. Requires hands-on lab activities with various operating systems and application installations.

Prerequisites:... CIS 100

CIS-160: COBOL Programming `BCT`

Credit Hours:...3.00

Contact Hours:...4.00

Emphasizes software maintenance in COBOL and the software development life cycle. Covers why and how program modifications are necessary, and how to analyze, code, test, and debug existing programs.

Prerequisites:... CIS 125

CIS-162: Perl Programming `BCT`

Credit Hours:...4.00

Contact Hours:...4.00

An intermediate-level course that probes the benefits of a powerful scripting language. Examines basic Perl program structure, flow control fundamentals used under different platforms, search and replace techniques, short cuts, associative arrays, normalizing, sorting lists using multiple sort orders, and file manipulation. Also covers data types, pattern matching and subroutines, including exploration of popular modules such as DBI and Apache, introduces CGI (Common Gateway Interface) and ActivePerl programming.

Prerequisites:... CIS 129

CIS-170: C Programming `BCT`

Credit Hours:...3.00

Contact Hours:...4.00

An intermediate-level course which familiarizes the student with a compiler and the "C" programming language. Emphasizes designing, coding, testing, and debugging programs using the "C" language through laboratory exercises and detailed lectures.

Prerequisites:...CIS 125 or MATH 180

CIS-171: Java Programming `BCT`

Credit Hours:...3.00

Contact Hours:...4.00

An intermediate-level course which examines Java programming language and its various components. Emphasizes designing, coding, testing, and debugging programs using the Java language through laboratory exercises and detailed lectures.

Prerequisites:... CIS 170

CIS-172: JavaScript `BCT`

Credit Hours:...3.00

Contact Hours:...4.00

An intermediate-level course which explores the JavaScript programming language and its various components. Emphasizes designing, coding, testing, and debugging programs using the JavaScript language through laboratory exercises and detailed lectures.

Prerequisites:............................ CIS 122 or CIS 126 or Instructor permission

Courses

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
COM	Communications Division	MS	Math and Science Division
COU	Counseling Division	SSAF	Social Science, Arts, and Fitness Division

CIS-175: Digital Forensics I BCT

Credit Hours:..3.00

Contact Hours:...3.00

Introduces the fundamental principles, theory and application of computer investigations, computer forensics tools, information protection, professional development and security. Explores various types of cybercrime and investigative techniques. Students will examine emerging technologies used in law enforcement in relation to computer-related crimes scenes, evidence collection and analysis.

Prerequisites:.....CRJ-134 and CIS-100, both with a grade of "C" or better

CIS-186: Game Programming BCT

Credit Hours:..4.00

Contact Hours:...4.00

An intermediate-level course which presents the process, concepts, and techniques of game programming. Discusses game engines, game scripting and programming languages, game authoring systems, game physics, rendering, level, model and terrain editors, interactivity, special effects, and networking.

Prerequisites:... CIS 125

CIS-190: Co-op in Computer Information Systems BCT C

Credit Hours:..1.00

Contact Hours:...9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:.... Permission from Career Services Officer or Cooperative Education Officer

CIS-211: Web Server Administration BCT

Credit Hours:..2.00

Contact Hours:...2.00

Introduces the installation, configuration, and management of web server software. Offers hands-on experience in installing and administering the two dominant web server software platforms: Apache web server and Microsoft Internet Information Server (IIS). Covers web server security, performance monitoring and tuning, virtual hosting, proxy servers, and supporting database and dynamic content. Intended for network, server, or web administration; web development; or computer information system students.

Prerequisites:... CIS 129

CIS-212: Networking II BCT

Credit Hours:..3.00

Contact Hours:...3.00

Covers additional Local and Wide Area Networking topics that help prepare the student for the CompTIA Network+ certification test. Examines Network Operating System basics (NetWare, Unix, Windows Server); maintaining and upgrading networks; ensuring integrity and availability; network security; network design; implementation; and advanced troubleshooting techniques.

Prerequisites:..CIS 112 or CNT 110

CIS-215: Advanced Visual Basic.Net Database Programming BCT

Credit Hours:..3.00

Contact Hours:...4.00

This advanced-level course focuses on writing Windows application forms that interface with a database management system using the VB.Net language. Covers using data sources and datasets for Rapid Application Development, three-layer Windows Forms applications, using reporting features of Visual Studio, and how to use LINQ.

Prerequisites:..(CIS 111 or CIS 270) and CIS 130

CIS-220: Systems Analysis and Design BCT

Credit Hours:..3.00

Contact Hours:...3.00

A capstone course involving the study of techniques used by the systems analyst to design and implement computerized business information systems. Emphasizes written and oral communication skills necessary for the information technology professional through participation in a systems project designed to reinforce course material.

Prerequisites:.............CIS 111 and 125 and (CIS 122 or CIS 130 or CIS 170)

CIS-221: Instructional Technology for Elementary Teachers BCT

Credit Hours:..3.00

Contact Hours:...3.00

Covers basic computer literacy, including Microsoft Office and the Internet. Also introduces future teachers to educational software, technology devices, and technology resources. Includes the development of an electronic portfolio of assignments which demonstrate ways of incorporating technology in the classroom environment. This course is designed as the first course in Instructional Technology for the pre-elementary education student and fulfills the HFC general education graduation requirement in Computer Technology.

Prerequisites:... None

BCT	Business and Computer Technology Division		IT	Industrial Technology Division
C	Credit for Prior College-level Learning		HS	Health Sciences Division
COM	Communications Division		MS	Math and Science Division
COU	Counseling Division		SSAF	Social Science, Arts, and Fitness Division

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CIS-222: Web Database Development with PHP   BCT

Credit Hours:..4.00

Contact Hours:..4.00

An intermediate-level course in which a database-backed web site using PHP and MySQL is developed. Also covers HTML, CSS, PHP, database design, MySQL, XML, and security.

Prerequisites:... CIS 122

CIS-223: Instructional Technology for Secondary Teachers   BCT

Credit Hours:..3.00

Contact Hours:..3.00

Covers basic computer literacy, including Microsoft Office and the Internet. Also introduces future teachers to educational software, technology devices, and technology resources. Includes the development of an electronic portfolio of assignments which demonstrates ways of incorporating technology in the classroom environment. This course is designed as the first course in Instructional Technology for pre-secondary education students and fulfills the HFC general education graduation requirement in Computer Technology.

Prerequisites:.. None

CIS-227: Web Authoring   BCT

Credit Hours:..4.00

Contact Hours:..4.00

A web authoring course which focuses on the theory, design, and construction of Web pages and sites. Explores information architecture concepts, usability, layout, template development, multimedia integration, interactivity, site management, and web project management. Also introduces the industry leading web authoring and content management software to build and publish a web site.

Prerequisites:... CIS 126 and ART 107

CIS-229: UNIX System Administration   BCT

Credit Hours:..4.00

Contact Hours:..4.00

Covers the effective administration of a UNIX/Linux system and the knowledge and tasks required of the Linux+ certification exams. Discusses the architecture and internals of the UNIX and Linux Operating Systems along with laboratory exercises that include the installation and package management, device management, Linux file systems, files system hierarchy standards, shell scripting and data management, user interfaces and desktops, administrative tasks, essential system services, networking fundamentals, and security.

Prerequisites:... CIS 129

CIS-230: C++ Programming   BCT

Credit Hours:..3.00

Contact Hours:..4.00

An advanced-level course expanding upon arrays, pointers, structures, and file I/O. Covers theory and application in areas such as the standard template library, object oriented constructs, data and classes, and migrating from "C" to "C++."

Prerequisites:... CIS 170

CIS-232: Advanced C# Database Programming   BCT

Credit Hours:..4.00

Contact Hours:..4.00

An advanced-level course focusing on writing Windows application forms that interface with a database management system using the C# language. Covers using data sources and datasets for Rapid Application Development, three-layer Windows Forms applications, using reporting features of Visual Studio, and how to use LINQ.

Prerequisites:..CIS-111 & CIS-130

CIS-235: Advanced Flash   BCT

Credit Hours:..3.00

Contact Hours:..3.00

Provides instruction and hands-on laboratory experience on advanced Flash development. Discusses topics necessary for careers in web multimedia development. Covers Flash games, audio and video file integration, complex animations, ActionScript programming, interactivity, ActionScript controlled motion, preloaders, form processing, external content, and document management.

Prerequisites:..ART 108

CIS-242: Voice Over IP (VoIP)   BCT

Credit Hours:..2.00

Contact Hours:..2.00

An intermediate-level course focusing on IP Telephony devices and Voice Over IP (VoIP). Emphasizes terminology, concepts, installing, configuring, using, maintaining, and troubleshooting a digital voice system. Covers the installation and configuration of a Digital PBX system through laboratory exercises.

Prerequisites:..CIS 112 or CNT 110

CIS-244: NAS and Virtualization   BCT

Credit Hours:..3.00

Contact Hours:..3.00

An intermediate-level course focusing on Network Attached Storage (NAS) devices and Server OS Virtualization. Emphasizes terminology, concepts, installing, configuring, using, maintaining, and troubleshooting of an iSCSI NAS device and OS Virtualization on those devices.

Prerequisites:... CIS 124

Courses

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
COM	Communications Division	MS	Math and Science Division
COU	Counseling Division	SSAF	Social Science, Arts, and Fitness Division

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CIS-270: Oracle Database Administration   BCT

Credit Hours:..3.00

Contact Hours:..4.00

An advanced-level course familiarizing the student with the Oracle Database Management System covering database terminology, data structure design, data retrieval, and manipulation. Includes database server installation, configuration, Oracle components and architecture, user administration and security, performance monitoring, client application access, and backup and recovery through laboratory exercises.

Prerequisites:....................................CIS 111 or Instructor permission

CIS-271: Advanced Java   BCT

Credit Hours:..4.00

Contact Hours:..4.00

An advanced-level course which examines advanced Java features including Java EE/J2EE, data structures, file I/O, database connectivity, Servlets, networking, Java Beans, Java Server Pages (JSP), Struts, and Java Frameworks. Covers practical programming exercises and compilers.

Prerequisites:.. CIS 171

CIS-272: Project Management   BCT

Credit Hours:..4.00

Contact Hours:..4.00

An advanced-level course which studies project management techniques that provide a foundation for the CompTIA IT Project+ certification and Project Management Body of Knowledge (PMBOK). Also covers project integration, scope, time, cost, quality, human resources, communications, risk, and procurement management. Utilizes Microsoft Project software to manage a project.

Prerequisites:....................................CIS 220 or Instructor permission

CIS-275: Digital Forensics II   BCT

Credit Hours:..3.00

Contact Hours:..3.00

Addresses the comprehension and application of Digital Forensic Investigations. Students will evaluate and synthesize technical and legal issues in relation to digital evidence. Students will apply various skills and techniques, combined with numerous investigative software tools to analyze seized electronic media. Students subject to background investigation prior to admittance.

Prerequisites:....................................CRJ-134, CIS-175, CNT-260, and CIS-280 all with a grade of "C" or better

CIS-280: Information Assurance and Security   BCT

Credit Hours:..4.00

Contact Hours:..4.00

An intermediate-level course that provides a comprehensive understanding of Information Assurance and Security as defined in the National Training Standard for Information Systems Security Professionals. Emphasizes Information Assurance Skills that are necessary to address government and industry security needs.

Prerequisites:..CIS-129 & either CNT-110 or CIS-112

CIS-290: Co-op in Computer Information Systems   BCT C

Credit Hours:..2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5

Prerequisites:...................................Permission from Career Services Officer or Cooperative Education Officer

CIS-295: Network Design and Implementation   BCT

Credit Hours:..3.00

Contact Hours:..3.00

A capstone course covering the design, implementation, and support of a Local Area Network (LAN). Examines basic LAN design methods and tools, Network Operating Systems, LAN implementation considerations, LAN hardware, and network troubleshooting techniques. Includes the design and implementation of a LAN in a lab setting complete with file servers, system backups, wireless and wired clients, printing, Internet Access, configuration of switches, VLANs, VPNs, routers, and firewalls.

Prerequisites:...................................CNT 110 and CNT 120 and CNT 210 and CNT 220 and at least two of the following: CIS 114, CIS 124 or CIS 229

CIS-296: Information Assurance Methodology   BCT

Credit Hours:..3.00

Contact Hours:..3.00

A capstone course providing hands-on experiences in the planning, implementation, and maintenance of Information Security systems. Covers security technologies and tools, footprinting, scanning and enumeration, web browser security, access control, data management and recovery, log security issues, network intrusion detection systems, virtual private networks, encryption and malware prevention, and defense. Analyzes and implements information security techniques through laboratory exercises.

Prerequisites:...CRJ 131, CRJ 134, CIS 158, CIS 272, CIS 280, and CNT 260

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

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CIS-297: Special Topics in Computer Information Systems **BCT**

Credit Hours:..1.00

Contact Hours:..0.93

Explores selected topics as determined by the academic department and the instructor with emphasis on current Computer Information System trends. The specific special topic will be announced together with the prerequisites each term. Student can repeat the course when different topics are offered, earning credit for each different topic.

Prerequisites:...As appropriate

CIS-298: Special Topics in Computer Information Systems **BCT**

Credit Hours:..2.00

Contact Hours:..2.00

Explores selected topics as determined by the academic department and the instructor with emphasis on current Computer Information System trends. The specific special topic will be announced together with the prerequisites each term. Student can repeat the course when different topics are offered, earning credit for each different topic.

Prerequisites:...As appropriate

CIS-299: Special Topics in Computer Information Systems **BCT**

Credit Hours:..3.00

Contact Hours:..3.00

Explores selected topics as determined by the academic department and the instructor with emphasis on current Computer Information System trends. The specific special topic will be announced together with the prerequisites each term. Student can repeat the course when different topics are offered, earning credit for each different topic.

Prerequisites:...As appropriate

CLT-100: Computer Literacy Test **BCT**

Credit Hours:..0.00

Contact Hours:.. -0.03

Successfully passing the CLT-100 test satisfies HFCs General Education Computer Literacy Requirement, and depending on the program requirements of some/certain concentrations, the test may replace a requirement to take an actual course to meet the Computer Literacy Requirement. Note: Before deciding to take the CLT-100 test, a student is responsible for checking their program on WebAdvisor to see what computer-related course(s) must be taken to meet specific program requirements.

CNT-103: Network Infrastructure **IT**

Credit Hours:..2.00

Contact Hours:..2.00

For those interested in the physical aspects of network cabling and installation. Provides an overview of cabling and networking industry standards as well as emerging cabling technologies. Offers information about the industry and its worldwide standards, types of media and cabling, physical and logical networks, and signal transmission. Hands-on laboratory activities.

Prerequisites:...None

CNT-106: IT Essentials **IT**

Credit Hours:..4.00

Contact Hours:..4.00

Introduces the computer hardware and software skills required for entry-level information and communication technology (ICT) professionals. Topics include the fundamentals of PC technology, networking, and security and provides an introduction to advanced concepts.

Prerequisites:...None

CNT-110: CCNA: Networking I **IT** **C**

Credit Hours:..4.00

Contact Hours:..4.00

The first in a series of four courses designed to help prepare students for CCNA (Cisco Certified Network Associate) certification. Introduces students to the architecture, structure, functions, components, and models of computer networks. Emphasizes building simple LANs, performing basic configurations for routers and switches, and implementing IP addressing schemes. Strongly recommended that students be very familiar with working within a Windows environment and using a Web browser before taking this course. Note: Course topics help students prepare for the CCENT/CCNA Routing and Switching certification exams, but the exams are not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:...None

CNT-120: CCNA: Networking II **IT** **C**

Credit Hours:..4.00

Contact Hours:..4.00

The second in a series of four courses designed to help prepare students for CCNA (Cisco Certified Network Associate) certification. Describes the architecture, components, and operations of routers and switches in a small network. Emphasizes configuring and troubleshooting routers and switches and resolving common issues with various routing protocols, virtual LANs, and inter-VLAN routing in IP networks through laboratory exercises and detailed lectures. Note: course topics help students prepare for the CCENT/CCNA Routing and Switching certification exams, but the exams are not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:...CNT 110 – CCNA: Networking I

CNT-210: CCNA: Networking III `IT` `C`

Credit Hours:...4.00

Contact Hours:...4.00

The third in a series of four courses designed to help prepare students for CCNA (Cisco Certified Network Associate) certification. Describes the architecture, components, and operations of routers and switches in a larger and more complex network. Emphasizes configuring and troubleshooting routers and switches and resolving common issues with Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Spanning Tree Protocol (STP), and Virtual Local Area Network (VLAN), VLAN Trunking Protocol (VTP) in both Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6) networks through laboratory exercises and detailed lectures. NOTE: Course topics help students prepare for the CCNA Routing and Switching certification exam, but the exam is not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:..CNT 120 - CCNA: Networking II

CNT-215: Health Information Networking `IT`

Credit Hours:...4.00

Contact Hours:...4.00

Focuses on in-depth knowledge and skills that can be applied toward entry-level specialist careers in healthcare networking. HIN is a blended curriculum with both online and classroom learning. Presents principles and practicalities needed for information technology professionals who aim to specialize in healthcare network implementations.

Prerequisites:... CNT 210

CNT-220: CCNA: Networking IV `IT` `C`

Credit Hours:...4.00

Contact Hours:...4.00

The last in a series of four courses designed to help prepare students for CCNA (Cisco Certified Network Associate) certification. Discusses the wide area network (WAN) technologies and network services required by converged applications in a complex network. Covers the selection criteria of network devices and WAN technologies to meet network requirements, how to configure and troubleshoot network devices and resolve issues with data link protocols, and explores how to implement Internet Protocol Security (IPsec) and virtual private network (VPN) operations in a complex network through laboratory exercises and detailed lectures. NOTE: Course topics help students prepare for the CCNA Routing and Switching certification exam, but the exam is not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:... CNT 210

CNT-260: Network Security `IT`

Credit Hours:...4.00

Contact Hours:...4.00

Introduces network security. Emphasizes security terminology and concepts, network security design, security threats and vulnerabilities, security assessment tools and techniques, application, host, and data security, access control concepts and implementation, risk management and business continuity, and basic cryptography through laboratory exercises and detailed lectures. Course topics typically help students prepare for the CompTIA Security+ certification exam. NOTE: This exam is not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:........................ CNT 120 or CIS 112; or Instructor permission

CNT-270: CCNA Security `IT`

Credit Hours:...4.00

Contact Hours:...4.00

For students with Cisco Certified Entry Networking Technician (CCENT) training and/or equivalent experience interested in the technologies Cisco uses in its security infrastructure. Covers securing Cisco routers and switches including their installation, troubleshooting, and monitoring of network devices to maintain integrity, confidentiality, and availability of data and devices. Also includes recognizing network threats and vulnerabilities, and mitigating security threats. Laboratory activities. NOTE: Course topics help students prepare for the CCNA Security certification exam, but the exam is not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:...CNT 220 with a C grade or better or CCNA Certification or Instructor permission

CNT-291: CCNP - Routing `IT`

Credit Hours:...4.00

Contact Hours:...4.00

One of three courses leading to the Cisco Certified Network Professional (CCNP) designation. Topics include how to implement, monitor, and maintain routing services in an enterprise network. Presents planning, configuring, and verifying the implementation of complex enterprise LAN and WAN routing solutions, using a range of routing protocols in IPv4 and IPv6 environments. Also covers the configuration of secure routing solutions to support branch offices and mobile workers. Comprehensive labs emphasize hands-on learning and practice to reinforce configuration skills. NOTE: Course topics help students prepare for the CCNP ROUTE certification exam, but the exam is not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:.....CNT 220 or CCNA certification or Instructor permission

BCT Business and Computer Technology Division	**IT** Industrial Technology Division
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CNT-293: CCNP - Switching　　IT

Credit Hours:..4.00

Contact Hours:..4.00

One of three courses designed to prepare students for the Cisco Certified Networking Professional (CCNP) certification. Covers advanced skills required for building enterprise-class switched networks with integrated voice and wireless applications. Other topics include campus networks, VLAN implementation, Spanning Tree Protocol, inter-VLAN routing, network redundancy, wireless LANs, VoIP, and switch security issues. NOTE: Course topics help students prepare for the CCNP SWITCH certification exam, but the exam is not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:..CNT 220 or CCNA Certification or Instructor permission

CNT-295: CCNP - Network Troubleshooting　　IT

Credit Hours:..4.00

Contact Hours:..4.00

One of three courses leading to the Cisco Certified Network Professional (CCNP) designation. Covers how to monitor and maintain complex, enterprise routed and switched IP networks. Focuses on the planning and execution of regular network maintenance, as well as support and troubleshooting using technology-based processes and best practices, in a systematic and IT Infrastructure Library (ITIL)-compliant approach. Topics include planning maintenance for complex network, troubleshooting processes for complex enterprise networks, using maintenance and troubleshooting tools and applications, maintaining and troubleshooting campus switched solutions, maintaining and troubleshooting routing solutions, troubleshooting addressing services, troubleshooting network performance issues, troubleshooting converged networks, and maintaining and troubleshooting network security implementations. NOTE: Course topics help students prepare for the CCNP TSHOOT certification exam, but the exam is not included in this course. Industry certification exams are administered by an independent testing agency.

Prerequisites:..CNT 291 and CNT 293

COLL-101: College Success　　COU

Credit Hours:..3.00

Contact Hours:..3.00

Presents techniques to help students achieve academic success, including how to navigate the college environment and embrace diversity. Covers note taking, time management, and career decision-making.

Prerequisites:..None

COLL-105: Language Skills for College Success　　COU

Credit Hours:..3.00

Contact Hours:..3.00

A course designed for Dual Enrollment high school students, emphasizing reading strategies and skills that help prepare students for success in college level content-area and English composition courses, including those measured by a standardized placement test. Covers how to make connections with a variety of authentic texts, practice strategies needed for critical reading, and expand academic vocabulary. Requires students to complete online assignments that complement classroom activities and COMPASS pre- and post-testing. COLL 105 does not substitute for any required English course. This course may be repeated once for credit.

Prerequisites:.. Specified scores on PLAN, ACT, or a comparable standardized reading test. Permission of the high school counselor is required for enrollment

COMM-190: Co-op in Communications　　COM　C

Credit Hours:..1.00

Contact Hours:..4.87

Student will submit a formal request in writing to the faculty and Associate Dean for work experience to be considered for Credit for Prior College-Level Learning.

The student will complete an interview, a reflective paper, or a presentation to the faculty in which the student develops and describes the learning objectives supported by the work experience, how those learning objectives were achieved and how that learning was put into practice.

Finally, the student must also provide a portfolio (or something comparable) that shows the work completed, and provide some form of documentation confirming the work experience (a resume does not suffice) for which Credit for Prior College-Level Learning is requested.

Prerequisites: Permission from Career Services Officer or Job Developer in the Office of Career Services

COMM-290: Co-op in Communications　　COM　C

Credit Hours:..2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites: Permission from Career Services Officer or Job Developer in the Office of Career Services

COUN-110: Human Potential Seminar `COU`

Credit Hours:..2.00

Contact Hours:..2.00

Examines how to identify and apply positive life skills in order for each individual to discover and use their strengths, talents, and abilities. Covers empathy, peak experiences, internal and external motivational factors, goal setting, and values clarification.

Prerequisites: .... None

COUN-111: Advanced Human Potential Seminar `COU`

Credit Hours:..2.00

Contact Hours:..2.00

Use the group process and the tools developed in COUN 110 to further develop life skills that enable each individual to discover his or her potential, and to deal more effectively and efficiently with conflicts, blocks, failures, and life-style problems.

Prerequisites: ....COUN 110 or Instructor permission

COUN-114: Stress Management - A Personal Approach `COU`

Credit Hours:..2.00

Contact Hours:..2.00

Offers a supportive group setting for students to examine their own personal sources of stress, how these stress factors are affecting them, and what they can do to develop more effective coping strategies.

Prerequisites: .... None

COUN-115: Assertiveness Training `COU`

Credit Hours:..1.00

Contact Hours:..0.93

Examines how to improve communication and behavior. Also discusses how to differentiate between assertiveness, passiveness, and aggressiveness.

Prerequisites: .... None

COUN-116: Assertiveness in Daily Living `COU`

Credit Hours:..1.00

Contact Hours:..0.93

An advanced course in assertiveness focusing on communication problems with parents, siblings, friends, relatives, and strangers, including specific assertive strategies of successful communication with difficult people. Emphasizes how to refuse a request, ask for a favor, respond to criticism, and manage one's anger.

Prerequisites: .... None

COUN-118: Assertiveness at Work `COU`

Credit Hours:..1.00

Contact Hours:..0.93

Discusses how to get the most out of one's work environment. Covers how to apply for a job, ask for a raise, and negotiate salary. Examines how to apply assertiveness training techniques to handle both criticism from colleagues and a performance review from a supervisor.

Prerequisites: .... None

COUN-119: Issues in Personal Growth `COU`

Credit Hours:..2.00

Contact Hours:..2.00

Examines how to identify barriers to personal growth and how to overcome those barriers to find friendship, love, and happiness.

Prerequisites: .... None

COUN-120: Career Exploration `COU`

Credit Hours:..1.00

Contact Hours:..0.93

Examines how to perform a career assessment, create a genogram, and research potential career opportunities.

Prerequisites: ....none

COUN-125: Life Work Planning `COU`

Credit Hours:..3.00

Contact Hours:..3.00

Examines and analyzes one's own resources, strengths, and constraints to determine what is realistic for future change. Covers decision-making tools which can be utilized for effective planning resulting in alignment between one's life and work goals. Potential challenges are examined through problem-solving techniques.

Prerequisites: .... None

COUN-127: Job Interview Counseling `COU`

Credit Hours:..1.00

Contact Hours:..0.93

Offers successful strategies to fight job interview anxiety. Presents creative measures to secure an interview, how to dress appropriately for the interview, how to field questions, what to ask the interviewer, and post-interview follow-up. Resume required.

Prerequisites: .... None

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COUN-128: Active Parenting COU

Credit Hours:..2.00

Contact Hours:..2.00

Explores how to apply the basic principles of active parenting to both children and teens. Also discusses topics such as, but not limited to: how to parent children at different developmental states, the development of a child's ethnic identity, effective punishment strategies, challenges faced by working parents, stepfamilies, and communication patterns.

Prerequisites:.. None

COUN-129: Personality Type and Success COU

Credit Hours:..2.00

Contact Hours:..2.00

Covers personality theory/personality type, how to utilize the Myers-Briggs Type Indicator (MBTI) to develop a greater understanding and appreciation of self and others, and how to manage one's personality and accept the personality of others as it relates to relationships, employment, education, communication, lifestyle, and decision-making.

Prerequisites:.. None

CRJ-126: Introduction to Homeland Security SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Provides students with a comprehensive overview of Homeland Security policies, practices, and programs. Also discusses local, state, and federal initiatives, as well as the restructuring of the Department of Homeland Security.

Prerequisites:..English 079 eligible

CRJ-131: Introduction to Law Enforcement and Criminal Justice SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

An overview of the criminal justice system in the U.S. Topics covered are: the history of law enforcement: the political, sociological, and philosophic, and background of police functions; and the criminal courts. Constitutional problems as they relate to the police function are surveyed, and the use of recent technology in criminal justice is discussed.

Prerequisites:.. English-079 eligible

CRJ-132: Police Administration – Staff and Line Operations SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Focuses on uniformed police operations, both patrol and traffic, as well as principles of organization, management, planning, and crime prevention.

Prerequisites:..CRJ-131

CRJ-134: Criminal Investigation SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Introduces criminal investigation and the techniques of forensic science. Topics include information accumulation, specific crimes, and preparation for purposes of prosecution.

Prerequisites:..CRJ-131

CRJ-135: Juvenile Justice SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Covers the legal and philosophical basis of the juvenile justice process along with a review of the juvenile court procedures in Michigan. Discusses problems related to delinquency and its control.

Prerequisites:..CRJ-131

CRJ-136: Introduction to Corrections SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Explores the history and philosophy of corrections. Covers probation, parole, and the impact of prisoner rights law on the system as a whole.

Prerequisites:..English 079 eligible

CRJ-138: Probation and Parole SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Covers treatment of convicted law violators by correctional field services before and after prison, analysis of the role of probation and parole officers, and evaluation of community resources applied to the correctional task.

Prerequisites:..CRJ 136

Courses

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CRJ-140: Identity Theft: Prevention and Awareness **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Provides an overview of the identity theft problem in America. Includes current statistics from around the nation, profiles of specific cases, various prevention techniques, and steps to take if victimized.

Prerequisites:..CRJ 131

CRJ-141: Corrections Clients – Human Growth and Development **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Investigates human development and its relationship to criminal patterns, stressing the role of environment and family as influences on behavior. Specific problems such as substance abuse and mental pathologies are reviewed, and intervention strategies and treatment alternatives are discussed.

Prerequisites:..CRJ 136

CRJ-234: Criminalistics: Criminal Investigation Laboratory Techniques **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Offers laboratory experience in the fundamentals of investigation, including fingerprinting techniques and the examination of hair, fiber, glass, firearms, and tool marks.

Prerequisites:..CRJ 134

CRJ-251: Criminal Law **SSAF** **C**

Credit Hours:..4.00

Contact Hours:...4.00

A study of the basic elements of criminal law with particular emphasis on definitions of Michigan crimes.

Prerequisites:..CRJ-131

CRJ-252: Criminal Procedure **SSAF** **C**

Credit Hours:..4.00

Contact Hours:...4.00

Expands on the concepts presented in CRJ 251, emphasizing criminal procedure, including the laws of arrest and search and seizure, the rights of the accused; and the roles of the prosecutor, judge, jury and defense counsel in the judicial process. Also discusses both Michigan and federal constitutional issues.

Prerequisites:..CRJ 251

CRJ-253: Legal Issues in Corrections/Probation and Parole **SSAF** **C**

Credit Hours:..4.00

Contact Hours:...4.00

Introduces constitutional issues relating to corrections. Focuses on court processes with particular emphasis on major cases affecting corrections, including probation and parole.

Prerequisites:...CRJ 136 or Instructor permission

CRJ-285: Topics in Criminal Justice/Law Enforcement **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

An exit course covering a series of critical issues facing law enforcement personnel. Examines the diverse roles of the public police and how to achieve effective community policing.

Prerequisites:................................ENG 131, CRJ 131, and one 3-credit hour class in Criminal Justice

CRJ-286: Topics in Corrections/Probation and Parole **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

An exit course covering a series of critical issues facing corrections, probation, and parole personnel. The primary goals are to help the student understand the diverse roles of corrections, probation, and parole personnel and prepare for the job environment.

Prerequisites:................................ENG 131, CRJ 136, and one 3-credit hour class in Criminal Justice.

CRJ-287: Police Academy **SSAF**

Credit Hours:.. 21.00

Contact Hours:... 21.87

Covers the proper techniques of investigation, crime scene process, patrol procedures, operations and techniques. Emphasizes conflict mediation, report writing, and detention and prosecution of prisoners. First aid, investigations, evidence collection, disaster control, civil disorders and tactical operations will also be covered.

Prerequisites:...Instructor permission

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
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CRJ-291: Criminal Justice Internship 1 — SSAF

Credit Hours:...3.00

Contact Hours:...9.20

This is an internship program that provides the student with field experience with municipal, county, state, and local criminal justice agencies and related agencies in the private sector. This includes but is not limited to: District, Circuit, and Juvenile Courts, halfway houses, detention centers, local, county and state police agencies, the FBI, U.S Marshall Service, Drug Enforcement Agency and Homeland Security. The internship is available to students in both the Probation/Corrections and Parole and the Criminal Justice programs. Students will perform all of the duties of professionals in the given area at the staff level. Students will not have arrest authority or be authorized to carry guns but may accompany a ride along, shadow criminal justice personnel, work in crime labs, interview probation clients, and perform other administrative work. Students will receive hands on experience in their chosen field working alongside with and performing the duties of criminal justice professionals.

The internship requires a minimum of 9 hours of work each week off campus at a criminal justice site. Students are also required to meet on campus with the HFC faculty member on a weekly basis by arrangement. This class can only be taken once.

Prerequisites:..............GPA of 2.8, Completion of 12 hours of CRJ courses, and written consent of CRJ director before registration.

CRJ-292: Criminal Justice Internship 2 — SSAF

Credit Hours:...3.00

Contact Hours:...9.20

This is a continuation of the internship started in CRJ-291 and can only be taken as part of a year-long internship. Students will continue to gain field experience with municipal, county, state, and local criminal justice agencies and related agencies in the private sector. This includes but is not limited to: District, Circuit, and Juvenile Courts, halfway houses, detention centers, local, county and state police agencies, the FBI, U.S Marshall Service, Drug Enforcement Agency and Homeland Security. The internship is available to students in both the Probation/Corrections and Parole and the Criminal Justice programs. Students will perform all of the duties of professionals in the given area at the staff level. Students will not have arrest authority or be authorized to carry firearms but may accompany a ride along, shadow criminal justice personnel, work in crime labs, interview probation clients, and perform other administrative work. Students will receive hands on experience in their chosen field working alongside with and performing the duties of criminal justice professionals.

The internship requires a minimum of 9 hours of work each week off campus at a criminal justice site. Students are also required to meet on campus with the HFC faculty member on a weekly basis by arrangement. This class can only be taken once.

Prerequisites:......................................Successful completion of CRJ 291 and written consent of CRJ director before registration

DNCA-121: Beginning Tap — SSAF C

Credit Hours:...2.00

Contact Hours:...3.00

Introduces the basic rhythms, steps, and simple combinations of tap, a dance form derived from a combination of syncopated African rhythms, Irish clogging, and folk dance. First class meeting discusses proper footwear.

Prerequisites:.. None

DNCA-131: Beginning Latin and Ballroom Dance — SSAF C

Credit Hours:...2.00

Contact Hours:...3.00

Provides the basics of ballroom in the American and International styles in a group setting. Students will be able to recognize and execute basics of American Smooth and International Standard styles of Waltz, Foxtrot, Cha Cha, Rumba and East Coast Swing. Technique, rhythms and leading and following are studied and practiced.

Prerequisites:.. None

DNCA-132: Intermediate Latin and Ballroom Dance — SSAF C

Credit Hours:...2.00

Contact Hours:...3.00

Continues dances learned in DNCA 131 with more complex patterns. Basics of three Latin dances, Mambo, Bolero and Jive, and two Ballroom dances, Tango and Viennese Waltz, are added. Technique, rhythm, leading and following are studied and practiced.

Prerequisites:...DNCA 131 or Instructor permission

DNCA-133: Advanced Latin and Ballroom Dance — SSAF C

Credit Hours:...2.00

Contact Hours:...3.00

Continues the study and practice of dances learned in DNC 132 with more complex patterns with a partner. Basics of Latin dances, Paso Doble and Samba; and a Ballroom dance, Quickstep, are added. Rhythm, technique, and leading and following are studied and practiced.

Prerequisites:...DNCA 132 or Instructor permission

DNCA-141: Beginning Ballet — SSAF C

Credit Hours:...2.00

Contact Hours:...3.00

Introduces ballet movement and ballet movement vocabulary in French. Fundamental barre exercises are learned through the identification, execution, and understanding of their purpose. Students will learn technique at the barre, at the centre, and through the dance space.

Prerequisites:.. None

Courses

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DNCA-142: Intermediate Ballet   SSAF C

Credit Hours:..2.00

Contact Hours:..3.00

Continues the study of ballet via an expanded and more challenging movement vocabulary. More complex combinations at the barre, at the centre and through the dance space are explored. Skill is also acquired through the understanding of skeletal-muscular anatomy and function involved in dance. Care of the body and conditioning for dance is emphasized.

Prerequisites:...DNCA 141 or Instructor permission

DNCA-143: Advanced Ballet   SSAF C

Credit Hours:..2.00

Contact Hours:..3.00

Presents advanced-level ballet concepts via more complex and challenging adagio and allegro combinations, as well as excerpts from the classical ballet repertory. Also covers career opportunities in dance, and examines an abbreviated historical perspective of the classical excerpts offered.

Prerequisites:...DNCA 142 or Instructor permission

DNCA-151: Beginning Modern Dance   SSAF C

Credit Hours:..2.00

Contact Hours:..3.00

Explores Modern Dance as an art form that has a limitless way to express oneself in human movement. Primary emphasis is on developing technique of the basic Modern movement vocabulary. Course also covers skeletal muscular anatomy and function as it applies to dance movement, and an introduction to improvisation and composition.

Prerequisites:... None

DNCA-152: Intermediate Modern Dance   SSAF C

Credit Hours:..2.00

Contact Hours:..3.00

Further explores Modern Dance as an art form that offers a limitless way to express oneself in human movement. Primary emphasis is on building beyond basic Modern movement vocabulary to more complex phrases in the center and through the dance space.

Prerequisites:...DNCA 151 or Instructors' permission

DNCA-153: Advanced Modern Dance   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Explores the finer points of Modern Dance. Primary emphasis is on performing advanced movement phrases along with the study and practice of specific Modern Dance techniques. Course also supports the development of choreographic skill and stage presence.

Prerequisites:...DNCA 152 or Instructor permission

DNCA-161: Beginning Jazz Dance   SSAF C

Credit Hours:..2.00

Contact Hours:..3.00

Explores theatre style jazz dance. Primary emphasis is on developing knowledge of and experience in basic jazz movement vocabulary and technique accompanied by jazz and popular music. Course also includes study of music rhythms, a brief history of jazz, and the body instrument from an anatomical perspective.

Prerequisites:... None

DNCA-162: Intermediate Jazz Dance   SSAF

Credit Hours:..2.00

Contact Hours:..3.00

Further explores the characteristic movements of jazz dance via the use of more intricate footwork, movement phases, and combinations than those performed in basic jazz dance.

Prerequisites:.. DNCA 161-Beginning Jazz Dance or consent of instructor

DNCA-163: Advanced Jazz Dance   SSAF C

Credit Hours:..2.00

Contact Hours:..3.00

Emphasizes advanced rhythmic complexity and movement combinations, in depth practice of specific styles of Jazz dance, and proper body conditioning for the dancer. Also offers an overview of careers in dance and an introduction to choreography.

Prerequisites:...DNCA 162 or Instructor permission

DNCA-221: College Dance Company I   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

This is the first of four semesters of College Dance Company, providing opportunities to perform in a wide variety of genres and venues with different choreographers. Dance forms performed include, but are not limited to, classical, modern, jazz, tap, ballroom and Latin. In addition, HFC Full Circle Dance Company students have an opportunity to attend dance festivals, master classes, professional dance company concerts, and to have their choreography presented. Two or more performances of a final concert are scheduled on campus as well as other performances, both on and off campus. This course is open to college students and high school juniors and seniors by audition and interview. New dance students may audition in one of several scheduled group auditions or may schedule an individual audition with the director. A strong dance background is required.

Prerequisites:...Admission by audition each term

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Courses

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DNCA-222: College Dance Company II SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

This is the second of four semesters of College Dance Company, providing opportunities to perform in a wide variety of genres and venues with different choreographers. Dance forms performed include, but are not limited to, classical, modern, jazz, tap, ballroom and Latin. In addition, HFC Full Circle Dance Company students have an opportunity to attend dance festivals, master classes, professional dance company concerts, and to have their choreography presented. Two or more performances of a final concert are scheduled on campus as well as other performances, both on and off campus. This course is open to college students and high school juniors and seniors by audition and interview. New dance students may audition in one of several scheduled group auditions or may schedule an individual audition with the director. A strong dance background is required.

Prerequisites:...Admission by audition each term

DNCA-223: College Dance Company III SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

This is the third of four semesters of College Dance Company, providing opportunities to perform in a wide variety of genres and venues with different choreographers. Dance forms performed include, but are not limited to, classical, modern, jazz, tap, ballroom and Latin. In addition, HFC Full Circle Dance Company students have an opportunity to attend dance festivals, master classes, professional dance company concerts, and to have their choreography presented. Two or more performances of a final concert are scheduled on campus as well as other performances, both on and off campus. This course is open to college students and high school juniors and seniors by audition and interview. New dance students may audition in one of several scheduled group auditions or may schedule an individual audition with the director. A strong dance background is required.

Prerequisites:...Admission by audition each term

DNCA-224: College Dance Company IV SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

This is the fourth of four semesters of College Dance Company, providing opportunities to perform in a wide variety of genres and venues with different choreographers. Dance forms performed include, but are not limited to, classical, modern, jazz, tap, ballroom and Latin. In addition, HFC Full Circle Dance Company students have an opportunity to attend dance festivals, master classes, professional dance company concerts, and to have their choreography presented. Two or more performances of a final concert are scheduled on campus as well as other performances, both on and off campus. This course is open to college students and high school juniors and seniors by audition and interview. New dance students may audition in one of several scheduled group auditions or may schedule an individual audition with the director. A strong dance background is required.

Prerequisites:...Admission by audition each term

DNCA-230: Beginning Choreography SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Provides opportunities to use individual creativity through the composition of dance movement. Discover and practice manipulating movement using the dance elements of time, space, and energy to create and build a dance. Movement will mainly be composed for solo pieces.

Prerequisites:.. None

DNCA-253: Advanced Modern Dance SSAF C

Credit Hours:...2.00

Contact Hours:..3.00

Explores advanced modern dance. Primary emphasis is on performing advanced movement phrases and on developing choreographic skill and stage presence.

Prerequisites:...DNCA 152 or Instructor permission

DRAF-110: Introduction to Industrial Drafting IT

Credit Hours:...3.00

Contact Hours:..5.00

Introduces the use of drafting instruments, lettering technique, geometric construction, orthographic projection, pictorial drawing, basic dimensioning for manufacturing, sectioning, auxiliaries, an introduction to assembly drawings, print reading, and interpretation of drawings.

Prerequisites:.. None

DRAF-120: Introduction to CAD IT

Credit Hours:...4.00

Contact Hours:..6.00

Introduces Computer-Aided Drafting (CAD) techniques. Topics include: general computer operations, basic file management procedures, basic three-dimensional (3-D) solid modeling techniques, preparation of sketches for modeling, creating orthographic drawings, auxiliaries, sectioning, application of dimensions techniques, and assembly.

Prerequisites:.. DRAF 110

DRAF-122: SolidWorks Level I - Introduction IT

Credit Hours:...2.00

Contact Hours:..2.00

Introduces SolidWorks and its functionality including the creation of a rough sketch of geometry and how to correctly define it. Explores how to set up drawing units, modify dimensions on a sketch, and complete a 3-dimensional (3D) solid model. Also covers features of SolidWorks including orthographic views and basic file management procedures.

Prerequisites:...........................DRAF 120, equivalent/CAD class, CAD work experience, or Instructor permission

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DRAF-123: Introduction to CATIA V5 `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the basics of CATIA V5 and its functionality. Utilizes the part design, sketcher, drafting, and assembly design workbenches to make models that are properly constructed and constrained. Coursework explores how CATIA's tools and toolbars are used in these workbenches.

Prerequisites:.............................DRAF 120 or Instructor permission

DRAF-124: SolidWorks Level II - Advanced `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Focuses on applying orthographic principles to mechanical drawings, using the SolidWorks software program. Provides instruction on how to develop section views, auxiliary views, and isometric projections; how to lay out detailed drawings, including advanced assembly procedures and manipulation of assembly components; and how to apply dimensions for manufacturing to orthographic views.

Prerequisites:.. DRAF 122

DRAF-125: CATIA V5 Level II `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Builds on the CATIA V5 concepts introduced in DRAF 123. Expands upon some workbenches demonstrated in the previous course and others will be introduced. Topics include: advanced part design, advanced assemblies, kinematics simulations, the use of the specification tree, creating design tables, and using component catalogs.

Prerequisites:.. DRAF 123

DRAF-126: SolidWorks Level III - Applications `IT`

Credit Hours:..2.00

Contact Hours:..2.00

An advanced industrial applications course utilizing 3-dimensional (3D) advanced construction tools. Focuses on how to apply key concepts from prior SolidWorks courses to real-world industrial projects. Also examines how to create, edit, and export bills of materials; apply assembly modeling procedures; create exploded views; edit components in an assembly; add and constrain mates; utilize simulation Xpress tool; and perform basic motion analysis.

Prerequisites:.. DRAF 124

DRAF-127: CATIA V5 Level III `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explores the use of the drafting workbench and surfacing. Covers the application of dimensions and tolerances, and the creation of advanced views. Instruction in surfacing includes extruding and the creation of simple and complex surfaces in the generative shape design workbench.

Prerequisites:.. DRAF 123

DRAF-130: Technical Descriptive Geometry `IT` `C`

Credit Hours:..3.00

Contact Hours:..5.00

Covers advanced projection techniques. Utilizes auxiliary views to manipulate geometry and define relationships between points, lines, surfaces, and solids. Also covers revolution, intersections, solids, and developments.

Prerequisites:..DRAF 110 `

DRAF-131: UG NX Level 1 - Introduction `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the basics of UG NX and its functionality. Utilizes modeling, sketch creation, drafting, and assembly task environments to create and edit models that are properly constructed and constrained.

Prerequisites:..DRAF 120 or 123 or related work experience or Instructor permission

DRAF-132: UG NX Level II - Intermediate `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Builds on UG NX concepts introduced in DRAF 131. Explores different task environments. Topics include part families, expressions, assembly simulation, animation, and functional application of dimensions in drafting techniques for manufacturing.

Prerequisites:.. DRAF 131

DRAF-133: UG NX Level III - Advanced `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Builds on concepts presented in DRAF 132. Explores advanced techniques and topics, including manipulating, analyzing components, and creating new parts within existing assemblies as well as basic surfacing techniques.

Prerequisites:.. DRAF 132

BCT Business and Computer Technology Division   IT Industrial Technology Division
C   Credit for Prior College-level Learning   HS Health Sciences Division
COM Communications Division   MS Math and Science Division
COU Counseling Division   SSAF Social Science, Arts, and Fitness Division

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DRAF-134: UG NX Level IV - Applications   `IT`

Credit Hours:..2.00

Contact Hours:..2.00

An advanced-level industrial applications course that examines how to create 3-dimensional (3D) wireframe geometry, develop 3D models using surfacing functions, construct complex surfaces, create and operate kinematic simulations, and operate assembly simulations.

Prerequisites:.. DRAF 133

DRAF-142: Industrial Detailing   `IT`

Credit Hours:..4.00

Contact Hours:..6.00

Explores the making of working drawings using proper dimensioning techniques. Showing necessary views, placement of dimensions, use of different dimensioning styles, and calculation of tolerances are the basis of instruction. The function and relationship of mating parts in an assembly are considered when dimensioning to insure proper fit and function. Threads, fasteners, and common manufacturing operations are applied and dimensioned. Standard and commercial parts are selected from catalogs. Setup and application of CAD dimensioning styles and tolerances are utilized.

Prerequisites:...DRAF 110 and 120

DRAF-210: Die Design   `IT`

Credit Hours:..3.00

Contact Hours:..5.00

Focuses on advanced drawing techniques in the layout and design of production press work dies. Typical dies covered are blank, cam pierce, form, cutoff, draw, and progressive. Press computations and accessories are put in perspective as they relate to design problems. Drawing assignments are done extensively on CAD.

Prerequisites:.......................DRAF 130, DRAF 142, and MATH 100 or above

DRAF-220: Machine Element Drafting   `IT`

Credit Hours:..2.00

Contact Hours:..3.00

Focuses on the study of mechanisms, their motion, and related skeletal construction. Calculations are made to determine size and capacity requirements in the design of machine elements. Industrial techniques are applied to detail drawing of various machine parts. Drawing assignments are done extensively on CAD.

Prerequisites:.......................DRAF 130, DRAF 142, and MATH 100 or above

DRAF-230: Jigs, Fixtures, and Tools   `IT` `C`

Credit Hours:..3.00

Contact Hours:..5.00

Covers advanced techniques in design, layout, and detail of production tooling. Consideration is given to locating, clamping, and tolerancing a jig and fixture for the manufacture of an industrial part. Standard parts catalogs and library reference materials are used to provide guidance in solving design problems. Drawing assignments are done extensively on CAD.

Prerequisites:.......................DRAF 130, DRAF 142, and MATH 100 or above

DRAF-240: Product Drawing   `IT` `C`

Credit Hours:..2.00

Contact Hours:..3.00

Examines the demands of product drafting. The design process is applied in the development of a product with consideration given to its function, fix, aesthetics, ergonomics, and its ability to be economically manufactured. Drawing assignments are done extensively on CAD.

Prerequisites:.......................DRAF 130, DRAF 142, and MATH 100 or above

DRAF-255: Advanced Techniques

Credit Hours:..4.00

Contact Hours:..6.00

Examines the use of Computer-aided design (CAD) in advanced operations of making three-dimensional models. Solids analysis and the manipulation of geometry is explored utilizing current CAD software. Concepts of parametric modeling, drafting principles are reviewed and developed as they relate to solid model geometry.

Prerequisites:...DRAF 110 and DRAF 120
IT

DRAF-260: Advanced CAD Applications Solid Modeling   `IT` `C`

Credit Hours:..4.00

Contact Hours:..6.00

Covers three-dimensional, feature-based parametric solid CAD. Students create complex three-dimensional parametric models and then generate two-dimensional views from those CAD models. Single parts and assemblies are developed, constrained, and manipulated in the modeling process.

Prerequisites:...DRAF 110 and DRAF 120

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BCT	Business and Computer Technology Division	IT	Industrial Technology Division
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DRAF-297: Special Topics in Industrial Drafting Technology `IT`

Credit Hours:..1.00

Contact Hours:..0.93

Designed to explore selected topics as determined by the academic department and the instructor with emphasis on current drafting technology trends. The specific special topic will be announced together with the prerequisites each term. Students can repeat the course when different topics are offered, earning credit for each different topic.

Prerequisites:.. As appropriate

DRAF-298: Special Topics in Industrial Drafting Technology `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Designed to explore selected topics as determined by the academic department and the instructor with emphasis on current drafting technology trends. The specific special topic will be announced together with the prerequisites each term. Students can repeat the course when different topics are offered, earning credit for each different topic.

Prerequisites:.. As appropriate

EDU-201: Introduction to Education `IT` `C`

Credit Hours:..3.00

Contact Hours:..3.00

Covers the history of U.S. education, teacher certification process, professional organizations and their purpose, teaching methods, classroom management, diversity, reform movements, and school financing. Also addresses different philosophies of education, state standards, and high-stakes testing, and introduces lesson planning, instructional techniques, and classroom instruction. Assignments incorporated into students' e-portfolios, a program requirement.

EDU 201 is to be taken concurrently with the corresponding section of EDU 202-Introduction to Education Practicum, which involves placement in a classroom setting at the grade level at which the student wishes to teach. Course assignments in EDU 201 are coordinated with EDU 202.

This course is not to be taken concurrently with PSY 152.

Prerequisites:.............ENG 131, ENG 132, PSY 131, and CIS 221 or CIS 223

EDU-202: Introduction to Education Practicum `SSAF`

Credit Hours:..1.00

Contact Hours:..2.87

Prepares students for the profession of teaching, the process of becoming an educator, managing a classroom, various career paths in education, teacher certification and endorsement. Activities allow students to interact with and use State resources located on the Michigan Department of Education website. (See EDU 201 for more information).

This 45 clock hour practicum is to be taken concurrently with the corresponding section of EDU-201:Introduction to Education. Course assignments for students enrolled in EDU 202 will be coordinated between the EDU 201 instructor and the coordinating teacher assigned school practicum.

Prerequisites:.. ENG 131, ENG 132, PSY 131 with a C or better, and CIS 221 or CIS 223

EDU-260: History and Civics in Elementary Schools `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

Explores topics in history, politics, and civics taught in grades K-8 and prepares students to teach these topics. Also presents a survey of Michigan and American history through Reconstruction, as well as early world history.

Prerequisites:.. ENG 131 and ENG 132

ELEC-103: Basic Electricity `IT` `C`

Credit Hours:..4.00

Contact Hours:..6.00

Covers the fundamentals of electricity as applied to the electrical field. Topics include the electron theory, Ohm's Law, circuits, magnetism, inductance, capacitance, and alternating current circuits. Utilizes voltmeters, ammeters, power supplies, signal generators, and oscilloscopes to construct circuits during lab activities. Also utilizes computer simulations.

Prerequisites:... None

ELEC-106: Basic Electronics `IT` `C`

Credit Hours:..3.00

Contact Hours:..4.00

Introduces the fundamentals of solid-state components found in electronic circuits. Topics include solid state diodes, field effect transistors, and bipolar transistors. Discusses characteristics of these components and some basic circuits in which they are commonly used. Utilizes a software program to simulate various electronic circuits.

Prerequisites:..ELEC 103

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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ELEC-115: Digital Circuits 1 `IT` `C`

Credit Hours:...3.00

Contact Hours:...4.00

Introduces digital concepts; binary, hexadecimal, and BCD number systems; TTL and CMOS integrated circuit logic gate technology; Boolean algebra; logic tables; combinational logic; monostable and bistable multivibrators; storage registers; asynchronous counters; and the use of digital electronic simulation software. Extensive laboratory activities.

Prerequisites:.. None

ELEC-120: Basic Hydraulics `IT`

Credit Hours:...3.00

Contact Hours:...4.00

Introduces basic hydraulic principles, laws, components, and symbols. Topics include: safety; the use of tools; and procedures in the design, building, testing, troubleshooting, and repair of industrial hydraulic systems. Includes demonstrations and laboratory activities.

Prerequisites:.. None

ELEC-145: AC/DC Rotating Machinery `IT`

Credit Hours:...3.00

Contact Hours:...4.00

Focuses on theory and application of D.C. motors and generators, A.C. alternators, and single-phase and three-phase induction motors. Also covers single-phase and three-phase transformers. Includes laboratory activities with verification of several circuit principles.

Prerequisites:...ELEC 103

ELEC-155: Analog Electronics 1 `IT` `C`

Credit Hours:...3.00

Contact Hours:...4.00

Covers fundamental circuits and their characteristics. Focuses on rectifier circuits and amplifier systems. Laboratory work consists of experiments in rectification, filtering, amplification, and coupling.

Prerequisites:...ELEC 106

ELEC-185: Pneumatics `IT`

Credit Hours:...3.00

Contact Hours:...4.00

Explores the principles of fluid power pneumatics as they apply to industrial systems. Examines various pneumatic components with respect to their functions within pneumatic power and control systems. Includes laboratory activities.

Prerequisites:.. None

ELEC-195: AC/DC Circuit Analysis `IT` `C`

Credit Hours:...3.00

Contact Hours:...4.00

Focuses on D.C. single- and multi-source circuitry with the application of loop, node, and Thevenin's theorem. Also covers A.C. reactive circuits using both phasors and complex numbers for determining reactance, impedance, and power factor. Laboratory activities.

Prerequisites:...ELEC 103

ELEC-200: Ladder Diagrams and Motor Controls `IT`

Credit Hours:...3.00

Contact Hours:...4.00

Covers the fundamentals of electrical ladder diagrams and motor control circuits. Presents ladder logic, as well as labels, documentation, and symbology of electrical drawing with the use of ladder diagrams for troubleshooting. Also discusses control circuits for three-phase motors and sequential control of electro-pneumatic devices. Several single phase control circuits are included in laboratory exercises. Also included in the lab exercises are sequencing electro-pneumatic devices. Introduces students to the variable frequency drive to control three phase motor speed.

Prerequisites:...ELEC 103

ELEC-245: Programmable Controllers `IT`

Credit Hours:...3.00

Contact Hours:...4.00

Begins with a thorough discussion of the Allen Bradley Contrologix/Compactlogix programmable controller system characteristics, followed by a detailed presentation on how to use the programmable controller to solve the automated control problem.

Prerequisites:.. None

ELEC-255: Instrumentation Systems `IT`

Credit Hours:...3.00

Contact Hours:...4.00

Introduces instrumentation systems in a laboratory setting. Covers transducers including LVDTS, strain gages, accelerometers, load cells, magnetic pickups, and temperature detectors. Utilizes computer-based data acquisition including LabVIEW® graphical programming language.

Prerequisites:...ELEC 155

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ELEC-260: Automation Controls and Robotics   IT

Credit Hours:..3.00

Contact Hours:..4.00

Utilizes control specifications written by the student for laboratory automation machines and industrial robots to implement controls for non-synchronous and synchronous operation of the machine. Covers techniques, terminology, and documentation currently used in automated manufacturing.

Prerequisites:..ELEC 245

ELEC-281: Automation/Robotics 2   IT

Credit Hours:..3.00

Contact Hours:..4.00

Demonstrates how to navigate the RSLogix 5000 Design and Configuration software and utilize the fundamental features of RSLogix 5000, such as ladder logic editor, program and controller scoped tags, user-defined datatypes, and add-on instructions. Also covers how to structure, develop, and debug logic to meet a design specification for a machine sequence that will be simulated using an automation trainer. Laboratory activities.

Prerequisites:...ELEC 103 with a C grade or better or Instructor permission

ELEC-283: Instrumentation/LabVIEW 2   IT

Credit Hours:..3.00

Contact Hours:..4.00

Focuses on Laboratory Virtual Instrumentation Engineering Workbench (LabVIEW), a system design platform and development environment for a visual programming language from National Instruments. Begins with basic LabVIEW principles and steadily advances to more complex functions. LabVIEW is used to build virtual instruments (VIs). Topics include: G Programming, creating VIs, VI hierarchy, controls, indicators, constants, terminals, wires, data types, arrays, clusters, the bundle function, case structure, sub VIs, loops, charts, graphs, and documenting and debugging codes.

Prerequisites:...ELEC 103 with a C grade or better or Instructor permission

ELEC-290: Co-op in Electrical Technology   IT

Credit Hours:..2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:..................................Permission from Career Services Officer or Job Developer in the Office of Career Services

ELEC-295: Microprocessor Systems   IT

Credit Hours:..3.00

Contact Hours:..4.00

Focuses on the Motorola MC68HC11 microcontroller. Topics include: accumulator instructions, arithmetic and logic instructions, loops and timing instructions, indexed addressing, use of a cross assembler, interfacing with external devices, interrupts, analog-to-digital conversion, timer systems, input capture, EPROM Programming, and serial data exchange. Hands-on lab activities.

Prerequisites:..ELEC 115

ELEC-297: Special Topics in Electrical Technology   IT

Credit Hours:..1.00

Contact Hours:..1.00

Explores selected topics as determined by the academic department and the instructor with emphasis on current electrical technology trends. Specific special topics and the prerequisites will be announced each term. Course may be repeated when different topics are offered, earning credit for each different topic.

Prerequisites:...As appropriate

ELEC-298: Special Topics in Electrical Technology   IT

Credit Hours:..2.00

Contact Hours:..2.00

Explores selected topics as determined by the academic department and the instructor with emphasis on current electrical technology trends. The specific special topics and the prerequisites will be announced each term. Course may be repeated when different topics are offered, earning credit for each different topic.

Prerequisites:...As appropriate

ELI-101R: ELL Reading & Listening/Speaking 1   COM

Credit Hours:..6.00

Contact Hours:..9.13

ELI-101R is a non-transferable developmental course that emphasizes beginning college-preparatory reading and listening/speaking skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ELI-102R. This course does not count toward degree graduation requirements.

Prerequisites:..None

BCT Business and Computer Technology Division
C   Credit for Prior College-level Learning
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COU Counseling Division

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ELI-101W: ELL Writing & Grammar 1 `COM`

Credit Hours:...6.00

Contact Hours:...9.13

ELI-101W is a non-transferable developmental course that emphasizes beginning college-preparatory writing and grammar skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion will qualify students for ELI-102W. This course does not count toward degree graduation requirements.

Prerequisites:... None

ELI-102R: ELL Reading & Listening/Speaking 2 `COM`

Credit Hours:...6.00

Contact Hours:...9.13

ELI-102R is a non-transferable developmental course that emphasizes basic college-preparatory reading and listening/speaking skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ELI-103R. This course does not count toward degree graduation requirements.

Prerequisites:...A reading score of 38-51 on the ESL COMPASS Test or successful completion of ELI-101R

ELI-102W: ELL Writing & Grammar 2 `COM`

Credit Hours:...6.00

Contact Hours:...9.13

ELI-102W is a non-transferable developmental course that emphasizes basic college-preparatory writing and grammar skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of will qualify students for ELI-103W. This course does not count toward degree graduation requirements.

Prerequisites:...................................A grammar/usage score of 42-52 on the ESL COMPASS Test or successful completion of ELI-101W

ELI-103R: ELL Reading & Listening/Speaking 3 `COM`

Credit Hours:...6.00

Contact Hours:...9.13

ELI-103R is a non-transferable developmental course that emphasizes high-beginning college-preparatory reading and listening/speaking skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ELI-104R. This course does not count toward degree graduation requirements.

Prerequisites:...A reading score of 52-64 on the ESL COMPASS Test or successful completion of ELI-102R

ELI-103W: ELL Writing & Grammar 3 `COM`

Credit Hours:...6.00

Contact Hours:...9.13

ELI-103W is a non-transferable developmental course that emphasizes high-beginning college-preparatory writing and grammar skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ELI-104W. This course does not count toward degree graduation requirements.

Prerequisites:...................................A grammar/usage score of 53-62 on the ESL COMPASS Test or successful completion of ELI-102W

ELI-104R: ELL Reading & Listening/Speaking 4 `COM`

Credit Hours:...6.00

Contact Hours:...9.13

ELI-104R is a non-transferable developmental course that emphasizes pre-intermediate college-preparatory reading and listening/speaking skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ELI-105R. This course does not count toward degree graduation requirements.

Prerequisites:...A reading score of 65-72 on the ESL COMPASS Test or successful completion of ELI-103R

ELI-104W: ELL Writing & Grammar 4 `COM`

Credit Hours:...6.00

Contact Hours:...9.13

ELI-104W is a non-transferable developmental course that emphasizes pre-intermediate college-preparatory writing and grammar skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ELI-105W. This course does not count toward degree graduation requirements.

Prerequisites:...................................A grammar/usage score of 63-73 on the ESL COMPASS Test or successful completion of ELI-103W

ELI-105R: ELL Reading & Study Skills 5 `COM`

Credit Hours:...6.00

Contact Hours:...9.13

ELI-105R is a non-transferable developmental course that emphasizes low-intermediate college-preparatory reading and study skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ELI-106R. This course does not count toward degree graduation requirements.

Prerequisites:...A reading score of 73-79 on the ESL COMPASS Test or successful completion of ELI-104R

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ELI-105W: ELL Writing & Grammar 5 `COM`

Credit Hours:..6.00

Contact Hours:...9.13

ELI-105W is a non-transferable developmental course that emphasizes low-intermediate college-preparatory writing and grammar skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ELI-106W. This course does not count toward degree graduation requirements.

Prerequisites:...................................A grammar/usage score of 74-83 on the ESL COMPASS Test or successful completion of ELI-104W

ELI-106R: ELL Reading & Study Skills 6 `COM`

Credit Hours:..6.00

Contact Hours:...9.13

ELI-106R is a non-transferable developmental course that emphasizes intermediate college-preparatory reading and study skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ENG-082. This course does not count toward degree graduation requirements.

Prerequisites:.. A reading score of 80-86 on the ESL COMPASS Test or successful completion of ELI-105R

ELI-106W: ELL Writing & Grammar 6 `COM`

Credit Hours:..6.00

Contact Hours:...9.13

ELI-106W is a non-transferable developmental course that emphasizes intermediate college-preparatory writing and grammar skills for non-native English speakers. Lab/online assignments that complement classroom activities will also be required. Satisfactory completion of this course will qualify students for ENG-092. This course does not count toward degree graduation requirements.

Prerequisites:...................................A grammar/usage score of 84-89 on the ESL COMPASS Test or successful completion of ELI-105W

ELI-107T: ELL TOEFL Preparation `COM`

Credit Hours:..4.00

Contact Hours:...4.00

ELI-107T is a non-credit developmental course designed to prepare English Language Learners (ELL) to take the TOEFL (Test of English as a Foreign Language). In order to enroll, students must already have at least an intermediate-level of fluency in English. This course will focus on reading, writing, speaking, listening and test-taking skills. This course does not count towards degree graduation requirements.

Prerequisites:..ELI Level 5 or equivalent

ELI-108P: ELL Pronunciation and Conversation `COM`

Credit Hours:..3.00

Contact Hours:...3.00

A non-transferable developmental listening and speaking course for non-native English speakers designed to improve the pronunciation and conversational skills of English Language Learners (ELL) who already have at least an intermediate-level knowledge of English grammar and usage.

Prerequisites:.. A satisfactory score on the ELL placement test or successful completion of ELI-104R or NCELI-104R or Department Approval

ELI-109G: ELL Grammar Power `COM`

Credit Hours:..3.00

Contact Hours:...3.00

A non-transferable developmental grammar course for English Language Learners (ELL) who already have at least an intermediate-level knowledge of English grammar and usage. It is designed to strengthen students' knowledge of the rules governing acceptable English grammar. This course does not take the place of ENG-081, ENG-082, ENG-088, ENG-092 or ENG-093.

Prerequisites:...A satisfactory score on the ELL placement test or successful completion of ELI-105W or NCELI-105W or Department Approval

EMS-100: EMT-Basic Fundamentals `HS` `C`

Credit Hours:..9.00

Contact Hours:...9.00

Presents the technical knowledge and skills necessary for certification as a Basic Emergency Medical Technician (EMT-B). Focuses on Basic Life Support (CPR), airway management, medical emergencies, trauma, disaster management, shock and resuscitation, emergency childbirth, psychological emergencies, as well as extrications and more. Meets the recommendations of the United States Department of Transportation, National Traffic Safety Administration, National Emergency Medical Services Core Content, Scope of Practice Model, National Education Standards, and the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions Curriculum Supplement. NOTE: Successful completion of this course is required for individuals to be eligible to take the National Registry Certifying Exam for EMT-Basics; this exam is not included in this course.

Prerequisites:...COMPASS Reading score 82 or better. Writing score ENG 131 placement or successful completion of the required developmental English courses.

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
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COU	Counseling Division	SSAF	Social Science, Arts, and Fitness Division

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EMS-107: Basic Procedures Lab **HS** **C**

Credit Hours:..1.50

Contact Hours:...3.00

This laboratory course helps develop overall patient management skills required for Basic EMT. Covers equipment, assessment, evaluation, treatment, documentation, communication, and more. Course meets the practical recommendations of the United States Department of Transportation, National Traffic Safety Administration, National Emergency Medical Services Core Content, Scope of Practice Model, National Education Standards, and the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions Curriculum Supplement. Provides preparation for the National Registry standard practical examination.

Prerequisites:.................................COMPASS Reading score of 82 or better. Writing scores sufficient for ENG 131 placement. Writing requirement may also be fulfilled by successful completion of the required developmental English courses.

EMS-109: EMT-Basic Clinical Externship **HS** **C**

Credit Hours:..2.00

Contact Hours:...3.00

Provides a structured clinical experience in the hospital and in the prehospital emergency medical service environment. Focuses on providing an opportunity to demonstrate learned assessment skills in real-life situations under appropriate supervision. Course meets the recommendations of the National Department of Transportation for EMT- Basics. NOTE: Successful completion of this course is required for individuals to be eligible to take the National Registry Certifying Exam for EMT-Basics; this exam is not included in this course. (Due to the nature of this course, all students must have completed the Health Careers medical packet, criminal background clearance, and provide proof of health insurance prior to attending clinical. Students must also provide proof of a current Healthcare Provider CPR card from the American Heart Association or the American Red Cross prior to attending clinical rotations.)

Prerequisites:.................................COMPASS Reading score of 82 or better. Writing scores sufficient for ENG 131 placement. Writing requirement may also be fulfilled by successful completion of the required developmental English courses.

EMS-200: Paramedic I **HS**

Credit Hours:..3.00

Contact Hours:...3.00

Provides an overview of preparatory EMS systems, injury prevention, medical, legal, and ethical issues as well as general patient assessment before progressing through advanced assessment in the areas of respiratory and neurologic conditions. Reviews life span development and public health for EMS. Course ends by focusing on pathophysiology as it relates to various body systems/functions in the presence of disease or injury.

Prerequisites:............................EMT Basic MI License, BIO 233, and BIO 234 with "C" or better. COMPASS algebra 46+ or MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH-080 with "C" or better. COMPASS reading 82+. Writing score- ENG 131 eligible.

EMS-206: Paramedic Procedures Lab I **HS**

Credit Hours:..1.50

Contact Hours:...3.13

This laboratory course develops overall patient management skills. Covers equipment, assessment, evaluation, treatment, documentation, communication, and more. Lab activities focus on team building techniques, IV and medication administration, basic and advanced airway management, and ECG monitoring.

Prerequisites:..EMT Basic MI License, BIO 233 & BIO 234 with "C" or better. COMPASS algebra 46+ or MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH-080 with "C" or better. COMPASS reading 82+. Writing score- ENG 131 eligible.

EMS-210: Paramedic II **HS**

Credit Hours:..3.00

Contact Hours:...3.00

Begins with an overview of basic pharmacology and then introduces students to advanced pharmacological concepts. Intravenous access with fluid and medication administration is presented along with airway management. This course leads into cardiac rhythm recognition and assessment of the cardiac patient.

Prerequisites:.......EMT Basic MI License, BIO 233, and BIO 234 with "C" or better. COMPASS algebra 46+ or MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH-080 with "C" or better. COMPASS reading 82+. Writing score- ENG 131 eligible.

EMS-216: Paramedic Procedures Lab II **HS**

Credit Hours:..2.00

Contact Hours:...4.13

This laboratory course develops overall patient management skills. Covers equipment, assessment, evaluation, treatment, documentation, communication and more. Lab activities focus on the management of the cardiac patient, mega-code scenarios, spinal immobilization, traumatic injuries, and traumatic resuscitation.

Prerequisites:...EMS 200, 210, 206, and 290

EMS-220: Paramedic III **HS**

Credit Hours:..4.00

Contact Hours:...4.00

Introduces the pathophysiology of respiratory disease and neurological emergencies, then integrates this knowledge with assessment findings to develop a field impression and deliver appropriate medical care, including an in-depth discussion of endocrine emergencies and the associated treatments. Significant course time details the anatomy, physiology, and pathophysiology of various types of trauma. The emphasis is on treating the "whole patient," avoiding treatment distractions of any singular injury.

Prerequisites:....................................EMS 200, EMS 206, EMS 210, EMS 290

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EMS-226: Paramedic Procedures Lab III `HS`

Credit Hours:..1.00

Contact Hours:..2.00

Develops patient management skills. Covers equipment, assessment, evaluation, treatment, documentation, communication, and more. Subject matter is complementary to the student's corresponding lecture course in EMS 240. Lab focuses on pediatric, gynecological, and obstetric patients. Lab also emphasizes patient management that incorporates the use of all ALS skills presented in the program.

Prerequisites:..............................EMS 220, EMS 230, EMS 216, and EMS 295

EMS-230: Paramedic IV `HS`

Credit Hours:..4.00

Contact Hours:..4.00

Introduces pathophysiology of cardiovascular disease and discusses how to recognize and treat the associated dysrhythmias. Covers the following topics in a broad manner: anatomy and physiology (review), general pathophysiology, geriatric considerations, assessment and management of emergencies in the areas of hematology, gastroenterology, toxicology, substance abuse, urology and nephrology, behavioral and psychiatric disorders, and environmental emergencies.

Prerequisites:..............................EMS 200, EMS 210, EMS 206, and EMS 290

EMS-240: Paramedic V `HS`

Credit Hours:..3.00

Contact Hours:..3.00

Covers specialty topics such as OB/GYN, newborn resuscitation, and pediatrics. Also covers 12-Lead ECG including application and interpretation.

Prerequisites:...EMS 216, EMS 220, EMS 230, and EMS 295 all with C or better

EMS-290: Advanced Clinical I `HS`

Credit Hours:..4.00

Contact Hours:.. 11.87

Provides a structured clinical experience in hospital and field environments where designated tasks in specific topic areas must be completed. This set of clinical rotations emphasizes intravenous access and global patient management for patients in the operating room and the emergency department. Also covers a variety of cardiac diseases and dysrhythmias.

Prerequisites:............................EMT Basic MI License, BIO 233, and BIO 234 with "C" or better. COMPASS algebra 46+ or MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH-080 with "C" or better. COMPASS reading 82+. Writing score- ENG 131 eligible.

EMS-295: Advanced Clinical II `HS`

Credit Hours:..4.00

Contact Hours:.. 11.87

Provides a structural clinical experience in the hospital and field environments where designated tasks in specific topic areas must be completed. This set of clinical rotations emphasizes airway management skills in the operating room and in the field; global cardiac patient management in the cardiac cath. lab; and neurological assessments and trauma patient management in a variety of clinical settings.

NOTE: Due to the nature of this course, a student must have completed the Health Careers medical packet, drug screen, and criminal background clearance as required, and provide current ongoing proof of health insurance prior to attending advanced-level clinical.

Prerequisites:...EMS 200, EMS 206, EMS 210 and EMS 290 - all with a "C" grade or better

EMS-299: Advanced Clinical III `HS`

Credit Hours:..4.00

Contact Hours:.. 11.87

This competency-based capstone course provides a clinical experience in the hospital and a field internship in order to develop team leadership. Students must complete designated tasks in specific topic areas and in team lead positions with EMS transports. Students continue to focus on pediatric and obstetrical/gynecological patients. Students who need extended rotations to complete tasks from earlier in the year (who received permission to continue on) can do so after the requisite skills for this rotation have been met. Each individual's program portfolio is completed and assessed this semester.

NOTE: Due to the nature of this course, all students must have completed the Health Careers medical packet, drug screen, and criminal background clearance as required, and provide current ongoing proof of health insurance prior to attending advanced level clinical.

Prerequisites:...EMS 220, EMS 230, EMS 216, and EMS 295 all with a C or better

ENG-073: ELL TOEFL Preparation `COM`

Credit Hours:..4.00

Contact Hours:..4.00

A non-credit developmental course designed to prepare English Language Learners (ELL) to take the TOEFL (Test of English as a Foreign Language). In order to enroll, students must already have at least an intermediate-level of fluency in English. This course will focus on reading, writing, speaking, listening and test-taking skills. This course does not count towards degree graduation requirements.

Prerequisites:..ELI Level 5 or equivalent

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ENG-074: ELL Grammar Power `COM`

Credit Hours:..3.00

Contact Hours:..3.00

ENG-074 is a non-transferable developmental grammar course for English Language Learners (ELL) who already have at least an intermediate-level knowledge of English grammar and usage. It is designed to strengthen students' knowledge of the rules governing acceptable English grammar. This course does not take the place of English 081, 082, 088, 092 or 093.

Prerequisites:..........................A grammar/usage score of at least 83 on the ESL COMPASS Test or successful completion of ELI 105W or NCELI 105W or Department Approval

ENG-075: ELL Pronunciation and Conversation `COM`

Credit Hours:..3.00

Contact Hours:..3.00

ENG-075 is a non-transferable developmental listening and speaking course for non-native English speakers. It is designed to improve the pronunciation and conversational skills of English Language Learners (ELL) who already have at least an intermediate-level knowledge of English grammar and usage.

Prerequisites:..A reading score of at least 73 on the ESL COMPASS Test or successful completion of ELI 104R or NCELI 104R or Department Approval

ENG-079: Basic Reading `COM`

Credit Hours:..3.00

Contact Hours:..3.00

English 079 is a developmental course to prepare native English speakers to read at an acceptable level for English 081. Students will improve their reading comprehension skills by engaging with variety of fiction and non-fiction texts and focusing on vocabulary improvement. Learning lab and/or online work is required. Students who place into ENG 079 must have a minimum COMPASS Reading Test score of 25 and must take ENG 079 prior to or concurrently with their first developmental writing course.

Prerequisites:..Score of 25 or above on Reading Compass Placement Test

ENG-081: Developmental College Reading `COM`

Credit Hours:..3.00

Contact Hours:..3.00

A developmental course designed to prepare students to read at an acceptable level in English 131, 132 and 135. This course is required of students who must enroll in English 093 and whose score on the ASSET or COMPASS Reading Test is below the cut-off established by the English Division. Students required to take this course must pass it with a grade of S (Satisfactory) before taking English 131.

Prerequisites:......................Students must score at or above a designated level on the placement tests or have passed English 079.

ENG-082: Academic Reading, Speaking, and Listening for the English Language Learner `COM`

Credit Hours:..3.00

Contact Hours:..3.00

English 082 is a three-credit hour, generally non-transferable reading course, emphasizing reading strategies and skills that will prepare English Language Learners for success in college level content-area and English composition courses. Students will learn how to make connections with a variety of authentic texts, practice strategies needed for critical reading, and expand their academic English vocabulary. Lab/online assignments that complement classroom activities will also be required.

Prerequisites:......................Students must earn an ESL COMPASS reading test score between 87-91 or successfully complete ELI Level 6.

ENG-086: College Writing Laboratory `COM`

Credit Hours:..1.00

Contact Hours:..0.93

This Learning Lab course can be elected autonomously to improve writing skills or can be taken to supplement HFC composition courses such as English 131. This independent study course, which accommodates the students' skill levels, is designed to improve writing proficiency. Students will receive individual attention in once-a-week conferences with the instructor and will work with computer-assisted materials, audiovisual programs, and teacher-prepared handouts to overcome rhetorical, stylistic, and grammatical problems with writing. Evaluation is based on successful completion of assigned work, improvement, and attendance. This course does not substitute for any other English courses at HFC.

Prerequisites:.. None

ENG-088: Basic Writing: Sentences to Paragraphs `COM`

Credit Hours:..3.00

Contact Hours:..3.00

English 088 is a developmental writing course required of students whose scores on the ASSET or COMPASS Writing Test indicate that skills need to be learned before they enroll in English 093. Students will learn several sentence patterns, some grammatical and mechanical skills, and various methods for developing and organizing paragraphs. Writing a short essay, supplemental laboratory work and conferences will be required. Students must earn a grade of S (Satisfactory) before enrolling in English 093.

Prerequisites:................................COMPASS writing score at or below 24 or ASSET writing score at or below 31

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IT Industrial Technology Division

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ENG-092: Basic Writing for the English Language Learner: Paragraphs to Essays **COM**

Credit Hours:..3.00

Contact Hours:...3.00

This course is intended for English Language Learners (ELLs) whose placement scores indicate the need for instruction or review in order for them to write acceptable college compositions in English 131, or for ELLs who have successfully completed ELI Level 6. Various methods such as lectures, group discussions, textbook exercises, peer review, conferences, and lab work will be used to help students improve their expository writing skills. Students must earn a grade of C or higher before enrolling in English 131.

Prerequisites:......................... Students must earn an ESL COMPASS Writing test score between 90 and 93 or successfully complete ELI Level 6.

ENG-093: Basic Writing: Paragraphs to Essays **COM**

Credit Hours:..3.00

Contact Hours:...3.00

This course is intended for students whose placement scores indicate the need for instruction or review in order for them to write acceptable college compositions in English 131. Various methods such as lectures, group discussions, textbook exercises, peer review, conferences, and lab work will be used to help students improve their expository writing and study skills. To facilitate mastery of writing, students will receive study skills instruction. This course does not substitute for English 131,132, or 135. Students must earn a grade of S (satisfactory) before enrolling in English 131.

Prerequisites:...................................Students must have writing skills scores of 32-43 on the ASSET Test or 18-77 on the Compass Test

ENG-094: Accelerated Learning Program (ALP): Reading and Writing **COM**

Credit Hours:..3.00

Contact Hours:...3.00

This course is intended for students whose placement review indicates the need for additional instructional support in order for them to be successful in ENG-131. ENG-094 is a co-requisite of ENG-131A as part of the Accelerated Learning Program and provides writing, reading, study skills, and non-cognitive instructional support of the ENG-131 curriculum. Course work will help students develop as college writers and readers through discussion, workshop, homework, and occasional reading and writing assignments that complement ENG-131 work.

Prerequisites:...Compass scores at or above: Reading 51 and Writing 18, or Department Approval

ENG-120: Grammar Essentials **COM**

Credit Hours:..1.00

Contact Hours:...0.93

This course is for students who wish to sharpen their mechanical writing skills and expand their knowledge of English grammar terminology and rules. It is designed to help students who are ready for or who have comprehensive college-level writing skills but may need additional grammar usage knowledge for college course work, business communications, or professional certification testing. This course is not a developmental course and can be taken more than once.

Prerequisites:...ENG 131 eligible

ENG-121: Assisting with Elementary Reading **COM**

Credit Hours:..3.00

Contact Hours:...3.00

This course is designed for individuals who are working in pre-K or elementary classrooms as paraprofessionals or who desire to be employed in that capacity. It introduces students to the different stages of reading development, various methodologies used to teach and assess elementary reading and acquaints them with basal series, content texts, trade books, and teacher-made materials. Various tutorial methods, techniques to aid English as Second Language learners, and methods to assist teachers will be studied.

Prerequisites:......A satisfactory score on the English placement test or a grade of S in English 093 and a grade of S in English 081 is required

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ENG-131: Introduction to College Writing   COM

Credit Hours:..3.00

Contact Hours:...3.00

English 131 is the first college-level composition course in a two-semester sequence, emphasizing critical reading, critical thinking, and critical writing skills. Through readings, students will explore various topics and various types of writing. Through essays, written in and out of class, students will demonstrate the development of a clear main idea through well-organized supporting material, written in correct, effective English. To meet the above goals, a writing assignment integrating analysis and summary of an article and a persuasive paper synthesizing multiple sources will be included.

Prerequisites:................................... A satisfactory score on the English placement test or a grade of S in English 092 or English 093 and a grade of S in English 081 or 082, if required.

ENG-131A: Introduction to College Writing (ALP)   COM

Credit Hours:..3.00

Contact Hours:...3.00

English 131 is the first college-level composition course in a two-semester sequence, emphasizing critical reading, critical thinking, and critical writing skills. Through readings, students will explore various topics and various types of writing. Through essays, written in and out of class, students will demonstrate the development of a clear main idea through well-organized supporting material, written in correct, effective English. To meet the above goals, a writing assignment integrating analysis and summary of an article and a persuasive paper synthesizing multiple sources will be included.

Prerequisites:.................................. Compass scores at or above: Reading 51 and Writing 18, or Department Approval

ENG-131H: (Honors): Introduction to College Writing   COM

Credit Hours:..3.00

Contact Hours:...3.00

English 131 (Honors) is the first college-level composition course in a two-semester sequence, emphasizing critical reading, critical thinking, and critical writing skills. Through readings students will explore various topics and various types of writing. Through essays, written in and out of class, students will demonstrate the development of a clear main idea through well-organized supporting material, written in correct, effective English. To meet the above goals, a writing assignment integrating analysis and summary of an article and a persuasive paper incorporating limited outside information will be included. This assignment will focus on a theme related to the Honors Colloquium topic.

Prerequisites:... A satisfactory score on the English placement test or a grade of S in English 092 or English 093 and a grade of S in English 081 if required

ENG-132: College Writing and Research   COM

Credit Hours:..3.00

Contact Hours:...3.00

English 132 is the second course in the two-semester college-level reading and writing sequence that begins with English 131. The course further instructs students in the reading, writing, and critical thinking skills required at four-year colleges and universities, as well as in the workforce. Students will learn how to select, evaluate, analyze, synthesize, reference, and document source material, including a variety of literary works that explore diverse themes and cultural perspectives. Students will then use the source material to complete a college-level research paper.

Prerequisites:.. ENG 131 with a C or better

ENG-132H: (Honors): College Writing and Research   COM

Credit Hours:..3.00

Contact Hours:...3.00

English 132 (Honors) is the second course in the two-semester college-level reading and writing sequence that begins with English 131. The course further instructs students in the reading, writing, and critical thinking skills required at four-year colleges and universities and in the workforce. Students will learn how to select, evaluate, analyze, synthesize, reference, and document source material, including a variety of literary works that explore diverse themes and cultural perspectives relating to the Honors Colloquium topic. Students will then use the source material to complete a college-level research paper.

Note: this course meets the graduation requirement for General Education Outcome 4 and 5: Information Literacy and Written Communication.

Note: a grade of C- is not transferable and is not accepted by some programs at HFC.

Prerequisites:... ENG 131 with a B grade or better

ENG-135: Business and Technical Writing and Research   COM

Credit Hours:..3.00

Contact Hours:...3.00

Designed for students interested in developing professional workplace communication and critical thinking skills, English 135 satisfies the Information Literacy and Written Communication General Education graduation requirements for many HFCC degree programs. Students design documents such as resumes, letters, memos, instructions, proposals, and an extensive, research-based documented report for the kinds of readers they will address as professionals. This course should be especially valuable for students pursuing careers in business, computer science, automotive technology, allied health, and other technical fields. It transfers to many four-year institutions.

Prerequisites:................. ENG 131 with a C or better. (Note: C- grade is not transferrable and is not accepted by some programs at HFC)

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COM	Communications Division	**MS**	Math and Science Division
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ENG-139: Creative Writing   COM

Credit Hours:..3.00

Contact Hours:...3.00

An elective writing course that provides students, at any level of experience, with a firm grasp of the fundamentals of imaginative self-expression. The assignments are diverse, ranging from traditional to contemporary forms of poetry, fiction, and drama, and imaginative non-fiction, in order to offer students a broad range of new opportunities for development of their own chosen subjects, and new ways to polish their own personal style. At the end of the course, the student should be able to comprehend the differences between forms, to analyze forms for imagistic language, and to evaluate peers' writing, as well as, his or her own creative writing.

Prerequisites:......A satisfactory score on the English placement test or a grade of S in English 093 and a grade of S in English 081, if required

ENG-231: Introduction to Literature: Poetry and Drama   COM

Credit Hours:..3.00

Contact Hours:...3.00

Focuses on reading, discussion, and written analysis of poems and plays in order to develop an understanding and enjoyment of various authors and works. The poems are mostly British and American, but may, as well, be drawn from other literary traditions; the plays range from ancient Greek tragedy to Shakespeare and modern drama. Video and audio recordings may supplement readings and lectures.

Prerequisites:...... ENG 131 with a C grade or better (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-232: Introduction to the Short Story   COM

Credit Hours:..3.00

Contact Hours:...3.00

Focuses on reading, discussion, and written analysis of short stories in order to develop an understanding and enjoyment of various authors and works. Stories are drawn from various literary traditions, although emphasis may be placed on the American tradition, which has been especially productive and influential. Emphasis may also be placed on the historical development of the short story as a distinct literary genre.

Prerequisites:....................ENG 131 with a C or better (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-233: Introduction to the Novel   COM

Credit Hours:..3.00

Contact Hours:...3.00

Examines how novels both reflect and contribute to the development of the novel as a genre. Students will read major novelists primarily from the nineteenth and twentieth centuries. The titles chosen exemplify important developments and themes in prose fiction, each discussed as a statement of a particular author, a reflection of the

times in which the work was written, and an enduring expression of human experience.

Prerequisites:...... ENG 131 with a C grade or better (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-234: Topics in Literature   COM

Credit Hours:..3.00

Contact Hours:...3.00

A course in literature organized around a specific theme, genre, or field of inquiry. The student may take the course twice for credit, six hours maximum, but only if the topic is different.

Prerequisites:.ENG 131 with a C grade or better (Note: A C- grade is not transferrable and is not accepted by some programs at HFC)

ENG-235: American Literature Before 1900   COM

Credit Hours:..3.00

Contact Hours:...3.00

Through discussion and written analysis, English 235 encourages the reading of literary works in their entirety in an attempt to understand the meaning of the texts and their relation to the development of American thought and tradition. Authors include Emerson, Thoreau, Hawthorne, Melville, Dickinson, Whitman, Twain, and Crane. Biographical and critical information is obtained through lectures and reference reading.

Prerequisites:.............ENG 131 with a C grade or better (Note: A C- grade is not transferrable and is not accepted by some programs at HFC)

ENG-236: American Autobiography   COM

Credit Hours:..3.00

Contact Hours:...3.00

This course will introduce students to published essays, narratives, autobiographies, memoirs, journals and/or diaries by Americans who have significantly influenced the social, cultural, and political composition of America. The course will also examine issues such as gender inequality and religious institutions that compose American society.

Prerequisites:.ENG 131 with a C grade or better (Note: A C- grade is not transferrable and is not accepted by some programs at HFC)

ENG-237: American Literature Since 1900   COM

Credit Hours:..3.00

Contact Hours:...3.00

Through discussion and written analysis, English 237 encourages the habit of reading literary works in their entirety in an attempt to understand the meaning of the texts and their relation to the development of American thought and tradition. Themes include alienation, materialism, race relations, identity, conformity/rebellion, technology, environment, and war. Biographical and critical information is obtained through lectures and reference reading.

Prerequisites:.ENG 131 with a C grade or better (Note: A C- grade is not transferrable and is not accepted by some programs at HFC)

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ENG-239: Reading in Modern American Poetry COM

Credit Hours:..3.00

Contact Hours:...3.00

A survey of modern American poetry emphasizing the period since World War II and including such poets as Robert Frost, Wallace Stevens, William Carlos Williams, Frank O'Hara, Elizabeth Bishop, Anne Sexton, Imamu Amiri Baraka, Gary Snyder, and Allen Ginsberg. Covers the techniques and strategies American poets developed to write powerfully of the vast social and cultural changes affecting modern Americans' lives.

Prerequisites:...... ENG 131 with a C grade or better (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-241: Shakespeare COM

Credit Hours:..3.00

Contact Hours:...3.00

An introduction to the works of William Shakespeare, this course includes reading, discussion, and written analysis of six to eight of Shakespeare's comedies, histories, and tragedies. Readings can also include Shakespeare's non-dramatic poetry. Students also have the opportunity to observe, analyze, and evaluate his works in performance, either live or on film. Secondary readings, such as literary criticism and historical context, may also be introduced.

Prerequisites:...... ENG 131 with a C grade or better (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-243: Women's Lives in Literature COM

Credit Hours:..3.00

Contact Hours:...3.00

Women's Lives in Literature is a course emphasizing the reading and analysis of writing by (or perhaps about) women from the Middle Ages to the present. The materials include drama, poetry, novels, short stories, diaries, memoirs, letters, fantasy, and others. Students will have the opportunity to explore the interaction of dominant and marginal cultures as reflected in literature and the relationship of their individual experiences to women's lives as portrayed in literature.

Prerequisites:...... ENG 131 with a C grade or better (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-245: The Bible as Literature COM

Credit Hours:..3.00

Contact Hours:...3.00

Reading, discussion, and written analysis of major literary selections from the Old and New Testaments. The Bible will be studied not as a religious document but as a source of ideas and style reflected in various works of world literature.

Prerequisites:...... ENG 131 with a C grade or better (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-246: Introduction to Children's Literature COM

Credit Hours:..3.00

Contact Hours:...3.00

Introduces the forms, themes, history, and uses of literature written for children ages three to twelve. Students learn to evaluate and select literature critically and understand its use in preschool, elementary, and middle school classrooms. Genres to be studied include traditional fiction/folktales, contemporary realistic fiction, picture books, fantasy/science fiction, historical fiction, biography, nonfiction, and poetry/verse.

Prerequisites:.ENG 132 with a C grade or better (Note: A C- grade is not transferable and is not accepted by some programs at HFC.)

ENG-248: African American Literature COM

Credit Hours:..3.00

Contact Hours:...3.00

A survey of African American Literature from its eighteenth-century beginnings to the modern era, emphasizing reading and analysis of representative texts in all genres, including poetry, slave narrative, fiction, essay, and drama.

Prerequisites:...... ENG 131 with a C grade or better (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-295: Directed Study in English COM

Credit Hours:..1.00

Contact Hours:...0.93

A course allowing advanced study under the direction of a member of the English Division faculty. This course may be taken only after consultation with the instructor to determine the course content and the credit hours appropriate for the chosen project.

Prerequisites:... ENG 131 with a C or better AND permission of the Associate Dean (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ENG-296: Directed Study in English COM

Credit Hours:..2.00

Contact Hours:...2.00

A course allowing advanced study under the direction of a member of the English Division faculty. This course may be taken only after consultation with the instructor to determine the course content and the credit hours appropriate for the chosen project.

Prerequisites:... ENG 131 with a C or better AND permission of the Associate Dean (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

ENG-297: Directed Study in English   COM

Credit Hours:..3.00

Contact Hours:..3.00

A course allowing advanced study under the direction of a member of the English Division faculty. This course may be taken only after consultation with the instructor to determine the course content and the credit hours appropriate for the chosen project.

Prerequisites:.........................ENG 131 with a "C" or better AND permission of the Associate Dean (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC)

ENGR-101: Introduction to Engineering Design (IED)   MS C

Credit Hours:..3.00

Contact Hours:..5.00

An introductory course in which the student studies the design engineering process and its application. Through hands-on projects, students apply engineering standards and document their work. Students use industry standard 3D modeling software to help them design solutions to solve proposed problems, document their work using an engineer's notebook, and communicate solutions to peers and members of the professional community.

Prerequisites:...none

ENGR-102: Principles of Engineering (POE)   MS C

Credit Hours:..3.00

Contact Hours:..5.00

A survey course discussing major topics covered in a post-secondary engineering course of study, including mechanisms, energy, statics, materials, and kinematics. Emphasizes how to develop effective problem-solving skills and apply research and design to create solutions to various challenges. Also discusses how to properly document work and communicate solutions.

Prerequisites:.. None

ENGR-103: Civil Engineering and Architecture (CEA)   MS C

Credit Hours:..3.00

Contact Hours:..5.00

Studies the design and construction of residential and commercial building projects. Introduces the varied factors involved in building, site design, and construction including building components and systems, structural design, storm water management, site design, utilities and services, cost estimation, and energy efficiency. Discusses design teams and teamwork, communication methods, building codes and ordinances, engineering design calculations, technical documentation, and career opportunities in the design and construction industry.

Prerequisites:...................ENGR-101 or ENGR-102 or Instructor Permission

ENGR-104: Digital Electronics (DE)   MS C

Credit Hours:..3.00

Contact Hours:..5.00

Digital Electronics TM is the study of electronic circuits that are used to process and control digital signals. Digital electronics is the foundation of all modern electronic devices such as cellular phones, MP3 players, laptop computers, digital cameras, high definition televisions, etc. The major focus of the DE course is to expose students to the design process of combinational and sequential logic design, teamwork, communication methods, engineering standards, and technical documentation.

Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy, students will analyze, design and build digital electronic circuits. While implementing these designs students will continually hone their interpersonal skills, creative abilities and understanding of the design process.

Prerequisites:...................ENGR-101 or ENGR-102 or Instructor Permission

ENGR-106: Computer Integrated Manufacturing (CIM)   MS C

Credit Hours:..3.00

Contact Hours:..5.00

Presents the manufacturing approach of using computers to control the entire production process. Examines manufacturing history, individual processes, systems, and careers. In addition to technical concepts, the course also incorporates finance, ethics, engineering design, and focuses on how to analyze, design, and build manufacturing systems.

Prerequisites:.............ENGR-101 and ENGR-102 OR Instructor Permission

ENGR-107: Aerospace Engineering   MS C

Credit Hours:..3.00

Contact Hours:..5.00

Presents a type of engineering which develops new technologies for use in aviation, defense systems, and space exploration. Explores the evolution of flight, flight fundamentals, navigation and control, aerospace materials, propulsion, space travel, orbital mechanics, ergonomics, remotely operated systems, and related careers. Course also presents alternative applications for aerospace engineering concepts, and discusses how to analyze, design, and build aerospace systems. Final course activity is a multimedia project envisioning future professional accomplishments.

Prerequisites:...................ENGR-101 or ENGR-102 or Instructor Permission

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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ENGR-108: Engineering Design and Development `MS` `C`

Credit Hours:...3.00

Contact Hours:...6.00

A capstone course requiring the design and develop of an original solution to a valid, open-ended, technical problem by applying the engineering design process. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology.

Students will perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams of students will design, build, and test their solution. Finally, student teams will present and defend their original solution to an outside panel. While progressing through the engineering design process, students will work closely with experts and will continually hone their organizational, communication and interpersonal skills, their creative and problem solving abilities, and their understanding of the design process.

Prerequisites:...................ENGR-101 or ENGR-102 or Instructor Permission

ENGR-130: Introduction to Engineering `MS`

Credit Hours:...3.00

Contact Hours:...3.00

Introduces the engineering profession, problem solving fundamentals, applications, fields of study, career paths, teamwork skills, and ethics necessary in the engineering profession. Course work includes projects that deal with real world application of these aspects of engineering as related to engineering problems.

Prerequisites:...Pre-engineering enrollment; MATH-1091, MATH-1092, MATH-1093, AND MATH-1094 OR MATH 110 OR MATH 112, OR high school algebra and trigonometry

ENGR-201: Science of Materials `MS`

Credit Hours:...3.00

Contact Hours:...3.00

Introduces the science of engineering materials. The properties of metals, alloys, polymers, and ceramics are correlated with their internal structure (atomic, crystal, micro- and macro-) and service environment (mechanical, chemical, thermal, magnetic, and radiation effects).

Prerequisites:.........................MATH 180 and CHEM 141 (with a C or better)

ENGR-232: Statics `MS`

Credit Hours:...3.00

Contact Hours:...3.00

Covers basic concepts and principles of statics including an introduction to the mechanics of materials. Also discusses vector algebra, equilibrium of mechanical systems, centroids, moments of inertia, stress and deflections of beams under load, statically indeterminate loads, and virtual work.

Prerequisites:..MATH 180 with a C grade or better

ENGR-233: Dynamics `MS`

Credit Hours:...3.00

Contact Hours:...3.00

Covers basic concepts and principles of dynamics with the application of Newton's laws of motion to engineering. Covers kinematics, kinetics of particles and rigid bodies, equations of motion, impulse-momentum principles, impact and work-energy principles and oscillations.

Prerequisites:....................ENGR 232 or PHYS 231 - both with a C or better

ENGT-245: Applied Statics `IT` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Provides the necessary mechanics background for some engineering technology programs including mechanical, construction, architectural, drafting, and manufacturing. Main topics are forced on structures, moments, equilibrium, stresses and deformation in axially-loaded members, torsion members and beams. Also covers elementary design of structural members.

Prerequisites:.....................................MATH-1091, MATH-1092, MATH-1093, AND MATH-1094 AND MATH-112 OR MATH-110 AND MATH-112 OR MATH-115 OR MATH-175 or MATH-180

ENGT-250: Machine Elements Design `IT` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Applies the principles of mechanics and mechanics of materials to machine design. Analyzes the elements of machines in terms of their static and dynamic behavior. Discusses selection and sizing of machine elements. The finite element technique for the analysis of machines and their counterparts may be used.

Prerequisites:...ENGT-245 or Instructor permission

ENGT-265: Mechanical Senior Project `IT`

Credit Hours:...3.00

Contact Hours:...3.00

A capstone course requiring the design and development of a new product or process, by applying the engineering design process. This process includes background research and engineering analysis, prototype construction and testing, and communication and reporting. Students build critical thinking by applying their drafting and design skills in development of new products.

Prerequisites:...ENGT-250 or Instructor permission

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
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ENT-100: Basic Workplace Skills   **IT** **C**

Credit Hours:..1.00

Contact Hours:...0.93

Presents basic workplace skills for careers in the energy technology and facilities maintenance fields. Addresses on-the-job safety concerns including hazards associated with electrical maintenance, chemical use, hazardous and toxic materials, and confined space scenarios. Offers American Red Cross CPR/AED and Blood-borne Pathogens Training certificates as part of the successful completion of this course.

Prerequisites: .... None

ENT-101: Introduction to Energy Technology   **IT** **C**

Credit Hours:..2.00

Contact Hours:...2.00

Introduces traditional sources of energy and provides an overview of the various forms of energy and their applications. Covers alternative, renewable, and traditional non-renewable sources of energy with consideration for energy conservation and use, energy transmission systems, measurement of energy, along with monitoring and analysis of applied energy to practical laboratory and field situations with hands-on experiences. Study of current and future applications of the energy are considered along with relevant environmental factors, economic drivers, and opportunities for careers in the energy field.

Prerequisites: .... None

ENT-103: AC and DC Electricity   **IT**

Credit Hours:..3.00

Contact Hours:...3.00

Covers the fundamentals of DC and AC circuits and circuit calculations. Examines electrical definitions, units of electrical measure, use of meters, series and parallel resistive circuits, capacitance, and inductance. Also explores basic wiring techniques and how to troubleshoot circuit faults.

Prerequisites: .... None

ENT-104: Heating Technology   **IT** **C**

Credit Hours:..4.00

Contact Hours:...4.00

Prepares students to work on residential and light commercial gas, oil, and electric forced-air and hot-water heating systems and related equipment. Explains standard equipment and systems, how to provide service checks, and the preliminary skills needed to installation, repair, and replace heating equipment using appropriate service tools and instruments. Extensive laboratory activities.

Prerequisites: ...ENT 103 or ENT 103 concurrent or Instructor permission

ENT-105: Introduction to Refrigeration, Air Conditioning, and Heating (RACH)   **IT**

Credit Hours:..2.00

Contact Hours:...2.00

An introductory course in refrigeration, air conditioning, and heating (RACH). Covers refrigeration components and operation of those components, the refrigeration charging and recovery process, and provides an orientation related to jobs in service and maintenance. Labs involve installing copper tubing, using test instruments, tools, and a variety of equipment.

Prerequisites: .... None

ENT-106: Sheet Metal Fabrication   **IT**

Credit Hours:..2.00

Contact Hours:...2.00

Examines the process of layout and fabrication of standard sheet metal fittings and how to construct standard fittings. Also covers sheet metal hand and power tools, and proper safety protocols.

Prerequisites: .... None

ENT-108: Introduction to Heating and Cooling Codes   **IT**

Credit Hours:..2.00

Contact Hours:...2.00

Introduces the Michigan Mechanical Code (International Mechanical Code) and AGA Gas Codes. Covers codes frequently required for entry-level jobs including how to quick-reference the codes. Also covers the procedures for pulling permits and inspection processes.

Prerequisites: .... None

ENT-109: HVAC Installation and Start-Up   **IT**

Credit Hours:..2.00

Contact Hours:...2.00

Covers basic technical skills for installing and starting up an HVAC system. Emphasizes practical installation and start-up techniques. Provides hands-on simulations of projects that require knowledge of sheet metal construction and installation, basic electricity, principals of refrigeration, and the procedures and safety steps for effectively installing and starting up HVAC systems. Extensive laboratory activities.

Prerequisites: ....ENT 103, ENT 104, ENT 105, ENT 106, ENT 108, or Instructor permission

BCT Business and Computer Technology Division
C   Credit for Prior College-level Learning
COM Communications Division
COU Counseling Division

IT   Industrial Technology Division
HS   Health Sciences Division
MS   Math and Science Division
SSAF Social Science, Arts, and Fitness Division

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ENT-113: Refrigeration Technology `IT`

Credit Hours:..4.00

Contact Hours:..4.00

Prepares students as multi-level service technicians in the refrigeration field. Covers basic refrigeration system design and the components for various domestic, residential, and light commercial systems. Discusses refrigeration system tools, materials, and instruments. Also covers advanced electrical wiring, refrigeration characteristics, charging, evacuation, dehydration, and refrigerant recovery. Course work includes hands-on wiring and circuit troubleshooting related to both mechanical and electrical components. The EPA Section 608 Technician Certification test in refrigerant reclamation is given at the conclusion of the semester.

Prerequisites:............................ ENT 103, ENT 105, or Instructor permission

ENT-119: Air Conditioning Technology `IT`

Credit Hours:..4.00

Contact Hours:..4.00

Prepares students to be multi-level service technicians for residential HVAC equipment. Emphasizes hands-on troubleshooting and maintaining residential total systems. Covers a combination of heating and air-conditioning systems including system design and layout, equipment selection, duct sizing, venting, air balancing and adjustments, air quality control, psychometrics of air conditioning systems, applied installation, and repair of total systems. Also discusses electrical diagrams.

Prerequisites:...................ENT 101, ENT 103, ENT 104, ENT 105, ENT 113 or Instructor permission

ENT-124: Construction Blueprint Reading `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explores mechanical (HVAC), architectural, and electrical drawings required for energy technology, plumbing and pipefitting, electrical, and construction related trades. Covers print reading, interpreting common symbols, working notes, views, and title blocks. Introduces project management and estimating. Note: Basic measurement and math skills required for print reading section.

Prerequisites:.. None

ENT-125: Steam and Hot Water Heating Systems `IT`

Credit Hours:..2.00

Contact Hours:..2.00

A pipefitting-plumbing course for those in technical construction, apprentices, and those interested in seeking basic hydronic HVAC, pipefitting-plumbing skills. Introduces principles of steam and hydronic systems, converter trap sizing, steam traps, and skimming boilers. Offers information on the proper selection, sizing, and installation of pipe and fittings related to hydronic and steam systems. Discusses how to design and layout typical systems. Lab activities.

ENT-141: Power Engineering I Energy Conversion Fundamentals `IT` `C`

Credit Hours:..2.00

Contact Hours:..2.00

A course in applied power and facilities plants fundamentals designed to provide introductory practical science studies for students entering the power, facilities, HVAC, and process operation and maintenance fields. Covers basic thermodynamics, operation and maintenance fundamentals, energy conversion, and conservation. Coursework and laboratory activities meet or exceed requirements of National Skill Standards for heat, power, process, HVAC, and facilities technicians and engineers. Mandatory plant visits. Laboratory activities.

Prerequisites:.. None

ENT-145: Power Engineering II Boilers and Auxiliaries `IT` `C`

Credit Hours:..4.00

Contact Hours:..4.00

An applied technology course designed to prepare learners to take necessary boiler-steam licensing exams and prepare them to function effectively as multi-skilled power or process plant engineers, boiler operators, stationary engineers, or heating plant operators. Learners study the operation and maintenance of boilers and auxiliaries and are required to operate, service, and maintain boiler and auxiliary equipment in a state-of-the-art cogeneration, heating-power plant laboratory. Field trips, power plant tours, and hands-on experiences on live power plant equipment systems are required to pass this course.

Prerequisites:.. None

ENT-196: Energy Technology Independent Study `IT`

Credit Hours:..2.00

Contact Hours:..2.00

An advanced energy technology course open to students who have completed two-thirds of various Energy Technology Associate degrees or advanced certificate. Course work activities are determined through consultation between student and instructor, but must include a documented plan of work with specific deadlines, objectives, and specific laboratory assignments.

Prerequisites:..Department approval

ENT-212: Commercial Heating `IT` `C`

Credit Hours:..3.00

Contact Hours:..3.00

An advanced heating course covering large commercial-industrial burners, light commercial rooftop units, building and plant commercial-industrial heating controls, equipment, and systems. Discusses manufacturer's equipment and instructions, planned service checking, and troubleshooting. Also covers repair and replacement of components using appropriate service tools and instruments. Extensive laboratory activities.

Prerequisites:...ENT 103

Courses

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
COM	Communications Division	MS	Math and Science Division
COU	Counseling Division	SSAF	Social Science, Arts, and Fitness Division

ENT-216: Light Commercial Refrigeration   IT

Credit Hours:...3.00

Contact Hours:...3.00

An advanced-level course covering service installation of light commercial refrigeration and air conditioning units. Covers installation, repair, and replacement of major and minor components, and troubleshooting of terminal air conditioning units, rooftop units, ice machines, walk-in coolers, and retail store cooling equipment. Discusses usage of electrical schematic diagrams, manufacturers' service information, service tools, equipment, and instruments. Extensive laboratory activities.

Prerequisites:............... ENT 103, ENT 104, ENT 105, ENT 113, or Instructor permission

ENT-219: RACH Light Commercial Systems   IT

Credit Hours:...3.00

Contact Hours:...3.00

An advanced-level course in light commercial heating and air conditioning systems. Covers lash-up, installation, and troubleshooting of controls and control packages. Discusses possible functions, operations, and components related to pneumatic, electronic, and direct digital control (DDC) building control systems. Also addresses use of controls to optimize energy savings. Laboratory activities.

Prerequisites:..................ENT 103, ENT 105, ENT 104, ENT 113, ENT 119, or Instructor permission

ENT-230: Michigan Mechanical Contractor - License Preparation   IT

Credit Hours:...4.00

Contact Hours:...4.00

Helps advanced-level technicians prepare for the State of Michigan Mechanical Contractor License exam. Reviews rules, regulations, heating service, refrigeration service, and air conditioning service. Note: this license exam is not included in this course.

Prerequisites:...................ENT 100 and 200, verifiable working experience with registered Michigan mechanical contractor, apprenticeship or Instructor permission.

ENT-235: Power-Facilities Controls Calibration   IT   C

Credit Hours:...3.00

Contact Hours:...3.00

Advanced instrumentation course applying the principal aspects of instrument and control measurement, tuning and calibration for commercial and industrial building and facilities equipment and systems, for heating plant, power production and generation plant and co-generation plant systems and equipment. Emphasizes situations using computer simulations, industrial controls, and standard instrument practices. Requires students to complete activities associated with practical field instrumentation experience such as actual lab activities, virtual lab exercises, or similar types of field activities to pass the course. Laboratory activities.

Prerequisites:...MFMT 224 or Instructor permission

ENT-252: Green Building Strategies   IT

Credit Hours:...3.00

Contact Hours:...3.00

Covers green technologies used in residential and commercial buildings. Discusses green building strategies that reduce the environmental impact, carbon footprint, and energy use of the building. Also covers how green building practices apply to the design, construction, and operation of buildings including electrical systems, HVAC equipment, site design, water consumption, and transportation connectivity among others.

Prerequisites:.. None

ENT-255: Green Building Certification Preparation   IT

Credit Hours:...2.00

Contact Hours:...2.00

Provides preparation for the U.S. Green Building Council's LEED Green Associate exams. Covers the different categories and systems used by LEED to evaluate buildings, including electrical production and usage, heating and cooling distribution and control, site consciousness including disruption, destruction, and conservation, water saving strategies, and basic architectural planning strategies. Focuses on how a conscious approach to building design and engineering can reduce negative impacts on the environment, energy consumption, and waste production. Note: the Green Associate exam is not included in this course.

Prerequisites:.. None

ENT-256: Power Engineering III Steam Plant Systems-Equipment   IT   C

Credit Hours:...4.00

Contact Hours:...4.00

Prepares students to take boiler and steam licensing exams and to function effectively as power or process plant engineers. Covers operating and maintaining turbines, engines, power plant electrical equipment, air compressors, industrial-commercial cooling systems, advanced control systems, and related equipment. Laboratory activities duplicate workplace skills, meeting requirements of National Skill Standards. Mandatory plant visits. Suggested co-requisites: ENT 141 and ENT 145.

ENT-259: Power Engineering IV - Plant/Building Operations and Maintenance   IT   C

Credit Hours:...2.00

Contact Hours:...2.00

A course covering the necessary building-plant maintenance procedures and process skills, knowledge and competencies for persons seeking positions as building and plant multi-skilled facilities or power plant technicians. Electrical, mechanical equipment, and systems in building and plants are covered for management of maintenance with hands-on interfacing to plan projects and the required maintenance, upgrading, commissioning - re-commissioning, sustainability, energy management and repair, along with continuing oversight to insure safety, efficiency along with economical continuity of operation. Plant visits may be required.

Prerequisites:.. None

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
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ENT-260: Energy Systems Management `IT`

Credit Hours:..4.00

Contact Hours:...4.00

Presents the technical, economic, and regulatory aspects of energy efficient building energy management. Explores the latest energy and cost-reduction strategies. Focuses on laboratory exercises designed to simulate residential and commercial energy systems.

Prerequisites:...................ENT 103, ENT 104, ENT 105, ENT108, ENT 119, or Instructor permission

ENT-265: Energy Systems Design `IT`

Credit Hours:..5.00

Contact Hours:...5.00

Examines the design principles of heating, cooling, and hydronic systems. Topics include both residential and commercial heat loss and gain, equipment selection, duct design, piping design, and air terminal selection.

Prerequisites:...................ENT 101, ENT 104, ENT 105, ENT 106, ENT 108, or Instructor permission

ENT-269: Energy Technology Project Management `IT`

Credit Hours:..2.00

Contact Hours:...2.00

Examines how to manage multiple aspects of a mechanical construction project management including, but not limited to, planning, scheduling, budgeting, and quality control and quality assurance. Discusses the principles of lean management. Also explores best practices, organizational principles, and group dynamics.

Prerequisites:...None

ENT-297: Special Topics in Energy Technology `IT`

Credit Hours:..1.00

Contact Hours:...0.93

Explores selected topics as determined by the academic department and the instructor with emphasis on current energy technology trends. Specific special topics are announced together with the prerequisites each term. The student can repeat the course when different topics are offered, earning credit for each different topic. Course may be used toward fulfilling the specific degree requirements for an associate degree or certificate.

Prerequisites:..As appropriate

ENT-298: Special Topics in Energy Technology `IT`

Credit Hours:..2.00

Contact Hours:...2.00

Explores selected topics as determined by the academic department and the instructor with emphasis on current energy technology trends. Specific special topics will be announced together with the prerequisites each term. The student can repeat the course when different topics are offered, earning credit for each different topic. Course may be used toward fulfilling the specific degree requirements for an associate degree or certificate.

Prerequisites:..As appropriate

FRE-131: Elementary French I `COM`

Credit Hours:..4.00

Contact Hours:...4.00

Teaches elementary reading, writing, speaking, and listening skills in French, focusing on communication in a cultural context. Students will learn vocabulary and explore the pronunciation and grammatical principles necessary for comprehending and expressing simple ideas in both spoken and written French. Note: A "C-" grade is not transferable and is not accepted by some programs at HFC.

Prerequisites:...None

FRE-132: Elementary French II `COM`

Credit Hours:..4.00

Contact Hours:...4.00

FRE 132 further builds reading, writing, speaking, and listening skills in French, focusing on communication in a cultural context. Students continue to expand their knowledge of vocabulary, pronunciation and grammatical principles in order to comprehend and express everyday ideas in both spoken and written French.

Prerequisites:................A grade of C or better in FRE 131 or in one year of high school French, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

FRE-141: Elementary French Conversation `COM`

Credit Hours:..3.00

Contact Hours:...3.00

An enrichment course, FRE 141 is conducted almost entirely in French and is designed for students wishing to expand their active vocabulary and improve their facility in speaking and listening. Class discussions are based on assigned readings, student reports, and current events. This course is transferable but is not a substitute for a basic language requirement. It may be taken concurrently with French 132, 231 or 232.

Prerequisites:.....................A grade of C or better in FRE 131 or in one year of high school French, or permission of instructor (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC)

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

FRE-231: Second-Year French III COM

Credit Hours:...4.00

Contact Hours:...4.00

FRE 231 follows FRE 132 and is the first of two intermediate-level French courses focusing on communication in a cultural context. Students will continue to develop their reading, writing, speaking, and listening skills in French, expand their vocabulary, and deepen their knowledge of pronunciation and grammatical principles in order to comprehend and express essential ideas in both spoken and written French.

Prerequisites:.. A grade of C or better in FRE 132 or in two years of high school French, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

FRE-232: Second-Year French IV COM

Credit Hours:...4.00

Contact Hours:...4.00

FRE 232 is the second of two intermediate-level French courses focusing on communication in a cultural context. Students will further develop their reading, writing, speaking, and listening skills in French, expand their vocabulary, and deepen their knowledge of pronunciation and grammatical principles in order to comprehend and express a wide range of ideas in both spoken and written French.

Prerequisites:... A grade of C or better in FRE 231 or in three years of high school French, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

FRE-290: Study Abroad in French Language and Culture COM

Credit Hours:...3.00

Contact Hours:...3.00

FRE 290 takes students to study French language and culture in a francophone country under the direction of a member of the Communications Division faculty. Prior to departure, students meet with the instructor for basic language and cultural lessons and to choose an individual topic of research in the area of French language, literature, or culture. While abroad, students put their knowledge of language and culture into practice. On their return, students reflect on their study abroad experience, develop their topic of special interest, and present it in the form of a paper, portfolio, or project. Specific travel information will be announced at least one semester prior to departure.

Prerequisites:............................A grade of C or better in FRE 131, 132, 231, or 232 or equivalent or Instructor permission (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC.)

FRE-295: Directed Study in French COM

Credit Hours:...1.00

Contact Hours:...0.87

FRE 295 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of French language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:...................................... A grade of C or better in FRE 131, 132, 231, or 232 or equivalent (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

FRE-296: Directed Study in French COM

Credit Hours:...2.00

Contact Hours:...0.87

FRE 296 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of French language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:...................................... A grade of C or better in FRE 131, 132, 231, or 232 or equivalent (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

FRE-297: Directed Study in French COM

Credit Hours:...3.00

Contact Hours:...0.87

FRE 297 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of French language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:...................................... A grade of C or better in FRE 131, 132, 231, or 232 or equivalent (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

GEOG-131: Principles of Physical Geography SSAF C

Credit Hours:...4.00

Contact Hours:...4.00

An overview examining the spatial distribution of the physical environment and major earth systems including plate tectonics, climate, land forms, vegetation, and natural hazards with emphasis on the ways humans utilize and alter the earth's surface.

Prerequisites: .... None

BCT Business and Computer Technology Division
C Credit for Prior College-level Learning
COM Communications Division
COU Counseling Division

IT Industrial Technology Division
HS Health Sciences Division
MS Math and Science Division
SSAF Social Science, Arts, and Fitness Division

Courses

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GEOG-132: World Regional Geography   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

An overview examining the spatial distribution of people and places around the world, with emphasis on the cultural, political, social, and economic aspects of regions. Topics are explored by examining ways that humans interact with the environment and one another. Emphasis is placed on the spatial variation of human activities at all scales from local to global.

Prerequisites: .... None

GEOG-138: Geography of Michigan   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Examines the spatial distribution of the human and environmental landscapes of Michigan. Places particular attention on the historical geography of settlement and human use of the natural environment.

Prerequisites: .... None

GEOG-231: Introduction to Geographic Information Systems   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

An overview introducing spatial analysis and the basic concepts, techniques, and applications of geographic information systems (GIS). Examines how to create spatial data files using GIS software and how to manipulate and analyze data.

Prerequisites: .... None

GEOL-131: Physical Geology   MS

Credit Hours:..4.00

Contact Hours:...5.00

Introduces the materials, processes, and concepts of geology. Topics include minerals, rocks, plate tectonics, earthquakes, volcanism, erosion, water, wind, glaciers, and geologic time. Laboratory work is devoted to hands-on projects involving geologic materials and processes, including rocks and minerals, maps, folds and faults, and dating of geologic features and events. This is a four (4) credit course with three (3) hours of lecture and two (2) hours of laboratory per week.

Prerequisites: .... None

GER-131: Elementary German I   COM

Credit Hours:..4.00

Contact Hours:...4.00

Teaches elementary reading, writing, speaking, and listening skills in German, focusing on communication in a cultural context. Covers vocabulary and explores the pronunciation and grammatical principles necessary for comprehending and expressing simple ideas in both spoken and written German.

Prerequisites: .... None

GER-132: Elementary German II   COM

Credit Hours:..4.00

Contact Hours:...4.00

GER 132 further builds reading, writing, speaking, and listening skills in German, focusing on communication in a cultural context. Students continue to expand their knowledge of vocabulary, pronunciation and grammatical principles in order to comprehend and express everyday ideas in both spoken and written German.

Prerequisites: .... A grade of C or better in GER 131 or in one year of high school German, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

GER-141: Elementary German Conversation   COM

Credit Hours:..3.00

Contact Hours:...3.00

An enrichment course, GER 141 is conducted almost entirely in German and is designed for students wishing to expand their active vocabulary and improve their facility in speaking and listening. Class discussions are based on assigned readings, student reports, and current events. This course is transferable but is not a substitute for a basic language requirement. It may be taken concurrently with German 132, 231 or 232.

Prerequisites: .... A grade of C or better in GER 131 or in one year of high school German, or permission of instructor (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC)

GER-231: Second-Year German III   COM

Credit Hours:..4.00

Contact Hours:...4.00

GER 231 follows GER 132 and is the first of two intermediate-level German courses focusing on communication in a cultural context. Students continue to develop their reading, writing, speaking, and listening skills in German, expand their vocabulary, and deepen their knowledge of pronunciation and grammatical principles in order to comprehend and express essential ideas in both spoken and written German.

Prerequisites: .... A grade of C or better in GER 132 or in two years of high school German, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
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GER-232: Second-Year German IV   COM

Credit Hours:..4.00

Contact Hours:..4.00

GER 232 is the second of two intermediate-level German courses focusing on communication in a cultural context. Students further develop their reading, writing, speaking, and listening skills in German, expand their vocabulary, and deepen their knowledge of pronunciation and grammatical principles in order to comprehend and express a wide range of ideas in both spoken and written German.

Prerequisites:..........A grade of C or better in GER 231 or in three years of high school German, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

GER-290: Study Abroad in German Language and Culture   COM

Credit Hours:..3.00

Contact Hours:..3.00

GER 290 takes students to study German language and culture in a German-speaking country under the direction of a member of the Communications Division faculty. Prior to departure, students meet with the instructor for basic language and cultural lessons and to choose an individual topic of research in the area of German language, literature, or culture. While overseas, students put their knowledge of language and culture into practice. On their return, students reflect on their study abroad experience, develop their topic of special interest, and present it in the form of a paper, portfolio, or project. Specific travel information will be announced at least one semester prior to departure.

Prerequisites:............................A grade of C or better in GER 131, 132, 231, or 232 or equivalent or Instructor permission (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC.)

GER-295: Directed Study in German   COM

Credit Hours:..1.00

Contact Hours:..0.87

GER 295 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of German language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:............................A grade of C or better in GER 131, 132, 231, or 232 or equivalent (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC)

GER-296: Directed Study in German   COM

Credit Hours:..2.00

Contact Hours:..0.87

GER 296 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of German language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:............................A grade of C or better in GER 131, 132, 231, or 232 or equivalent (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC)

GER-297: Directed Study in German   COM

Credit Hours:..3.00

Contact Hours:..0.87

GER 297 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of German language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:............................A grade of C or better in GER 131, 132, 231, or 232 or equivalent (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC)

GIS-131: Geospatial Technologies   MS

Credit Hours:..4.00

Contact Hours:..4.00

Introduces several aspects of geospatial technologies. Topics include cartography and map design, geospatial data and the global positioning system (GPS), geographic information systems (GIS), remote sensing (RS), and geospatial applications. Four hours of integrated lecture/lab per week. Home computer access recommended.

Prerequisites:...None

HCS-103: Employment Skills for Health Careers   HS

Credit Hours:..1.00

Contact Hours:..0.93

Explores the transition from campus to the workplace. Discusses career planning, workplace basics, and employer expectations. Also covers job search skills, networking, communication skills, interview techniques, organization systems, relationships, and management/employee issues. Emphasizes how to develop marketing strategies for health care positions and how to complete a resume package.

Prerequisites:...None

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Courses

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HCS-124: Basic Health Assessment `HS` `C`

Credit Hours:..1.00

Contact Hours:...0.93

Focuses on theory and techniques involved in basic patient assessment using vital signs. Addresses the areas of medical asepsis, standard precautions, proper body mechanics, and patient transportation. Laboratory activities.

Prerequisites:... None

HCS-131: Computers in Health Care `HS` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Presents the fundamentals of computer technology and specific applications that are important to the delivery of health care. Also examines legal and ethical considerations in the processing of confidential patient and medical information. Lab activities.

Prerequisites:... None

HIST-111: Ancient World History `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Covers the rise of civilization to the decline of major world civilizations in the early Common Era (c. 200 CE to c. 500 CE). Studies the ancient civilizations of Mesopotamia, Egypt, India, China, and the Greco-Roman world.

Prerequisites:...ENG 081 or ENG 082 eligible

HIST-112: Medieval-Early Modern World History `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Presents world civilizations during the transition from the Ancient classical times to the Modern Period, i.e., the Medieval and Early Modern periods (c. 500 CE - c. 1650 CE). The world civilizations include China from the Sui to the early Qing dynasties; Japan from its origins to the early Tokugawa Shogunate; early Arabia, the rise of Islam, and the Umayyad, Abbasid, Seljuk, and Ottoman empires; the Mongol Empire; the Aztec and Incan civilizations; and the European Middle Ages, Renaissance, and Reformation.

Prerequisites:...ENG 081 or ENG 082 eligible

HIST-113: Modern World History `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Studies world civilizations from the seventeenth century to the present. Emphasizes the Scientific, Political, and Industrial Revolutions and their global impact. Also explores cultural and political events that have affected national or international politics, such as the Enlightenment, nationalism, imperialism, and communism.

Prerequisites:...ENG 081 or ENG 082 eligible

HIST-151: American History I `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Covers Colonial America and the United States through the Civil War Period.

Prerequisites:...ENG 081 or ENG 082 Eligible

HIST-152: American History II `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Covers the United States since the Civil War Period

Prerequisites:...English 081 or ENG 082 Eligible

HIST-222: History of Rome, 753 BCE-500 CE `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

By exploring the social, political, economic, and military aspects of Roman civilization, this course seeks to explain: 1) how Rome rose from a small central-Italian city-state to the ruler of the Mediterranean world; 2) how it administered and ruled its diverse populations; and 3) the circumstances surrounding the end of the Roman Empire.

Prerequisites:...ENG 131 eligible

HIST-226: History of England to 1688 `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Surveys the history of England and the surrounding countries from the time of the Celts to the time of the Stuarts, with attention to the economic, religious, social, constitutional, and political developments.

Prerequisites:... ENG-131 Eligible

HIST-239: Colonial America `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Covers the history of Colonial North America, in multiple dimensions and in a variety of contexts, from the 1490s to the 1770s. Explores North American history as broadly as possible from American Indian, European, European-American, African, and African-American perspectives.

Prerequisites:... ENG-131 Eligible

Courses

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
COM	Communications Division	MS	Math and Science Division
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HIST-243: African-American History SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Presents an overview of Africans and African-Americans in the Colonies and the United States from African beginnings to the present. Emphasizes the conditions of slavery and on the cultural development of African-American peoples since the Emancipation.

Prerequisites:.. ENG-131 Eligible

HIST-248: Coming to the New World: American Ethnic and Immigration History from First Nations to the Present SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Traces the history of immigrants to North America and the United States from before Columbus to the present. Focuses on issues of cultural contact and conflict in American society, and issues of immigrant assimilation and acceptance into mainstream American cultures.

Prerequisites:...ENG 131 eligible

HIST-250: American Labor History SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Traces the history of American laborers in the contexts of social group character, industrial unionism, and the responses to the changing conditions of the broader American society.

Prerequisites:...ENG 131 eligible

HIST-252: History of Women in the United States SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Examines changes in the ideas about women and in the lives of women from Colonial times to the present, looking at various classes and ethnic and racial groups. Also describes the activities and accomplishments of women in the building of the United States.

Prerequisites:...ENG 131 eligible

HIST-254: History of Michigan SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Presents a general survey of the historical development of Michigan from French exploration to the present. Studies the economic, social, and political development of the state as part of the history of the United States.

Prerequisites:...ENG 131 eligible

HIST-256: Sea Power! A History of the U.S. Navy and American Maritime Heritage SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

This course takes an in-depth look at the principles, concepts, and elements of United States Sea Power. The course focuses on the historical, present, and future applications of sea power regarding the United States. There will be a particular emphasis on the role played by the US Navy, Marine Corps, Coast Guard and Merchant Marine in shaping the polices and culture of the United States.

Prerequisites:.. ENG-131 Eligible

HIST-258: The Revolutionary War Era SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Offers a study of the American Revolutionary War, including the causes, personalities, social groups, military aspects, founding documents, and the legacy of America's formative period, 1754-1791.

Prerequisites:...ENG 131 eligible

HIST-261: The Modern Middle East SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Proceeding from the traditional civilizations in the Middle East, coursework examines the impact of the industrialized powers, nationalism, industrialization, and religious and cultural change on the lands of the Middle East.

Prerequisites:...ENG-131 eligible

HIST-268: The History of Sports in America SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Provides an investigation of the influence of sports in America from the founding of Jamestown and Plymouth Plantation in the early 17th Century to the present.

Prerequisites:...ENG 131 eligible

HIST-270: The American Civil War SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Examines the American Civil War, including the causes, personalities, soldiers, social groups, significant battles, and legacy of America's defining conflict from 1820-1877.

Prerequisites:.. ENG 131 eligible

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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HIST-273: American Social History Since 1875 `SSAF` `C`

Credit Hours:...3.00

Contact Hours:..3.00

Explores the social history of the United States since the late nineteenth century, with special attention to changes resulting from industrialization and urbanization.

Prerequisites:...ENG 131 eligible

HIST-281: The Global Cold War, 1917-1991 `SSAF` `C`

Credit Hours:...3.00

Contact Hours:..3.00

Traces the development and evolution of the Cold War from a global perspective, including its roots before and during World War II, through the postwar to the 1991 collapse of the Soviet state.

Prerequisites:...ENG 131 eligible

HIST-283: The United States and the Cold War, 1917-1991 `SSAF` `C`

Credit Hours:...3.00

Contact Hours:..3.00

Traces the development and evolution of the Cold War from a primarily US perspective, including its roots before and during World War II, through the postwar period to the collapse of the Soviet state in 1991.

Prerequisites:...ENG 131 eligible

HIST-285: The United States and the Second World War `SSAF` `C`

Credit Hours:...3.00

Contact Hours:..3.00

Studies the United States during World War II, including the causes, politicians and personalities, military aspects, home front, and legacy of the war that defined the latter half of the 20th century and established the US as a world leader (1935-1945).

Prerequisites:...ENG 131 eligible

HIST-286: The United States and the Vietnam War `SSAF` `C`

Credit Hours:...3.00

Contact Hours:..3.00

Traces the causation factors leading to the escalation of U.S. involvement in the Vietnam conflict from 1945 until 1975. Emphasizes the political, diplomatic, and military strategy of the United States within the historical context of colonial rule over Vietnam, as well as the struggle for Vietnamese nationalism.

Prerequisites:...ENG 131 eligible

HIST-295: Directed Study `SSAF` `C`

Credit Hours:...1.00

Contact Hours:..0.87

Offers the opportunity to study a particular topic or issue in greater depth, working individually with an instructor of history. Explores the methodologies of the discipline including the use of primary sources or source criticism. The amount of work and expected outcomes reflect the number of credit hours

Prerequisites:...ENG 131 eligible

HIST-296: Directed Study `SSAF`

Credit Hours:...2.00

Contact Hours:..1.87

Offers students the opportunity to study a particular topic or issue in greater depth, working individually with an instructor of history. Examines the methodologies of the discipline, such as the use of primary sources or source criticism. The amount of work and expected outcomes reflect the number of credit hours.

Prerequisites:...........................Instructor permission and ENG 131 eligible

HIST-297: Directed Study `SSAF` `C`

Credit Hours:...3.00

Contact Hours:..2.87

Offers students the opportunity to study a particular topic or issue in greater depth, working individually with an instructor of History. Students will begin to learn the methodologies of the discipline, such as the use of primary sources or source criticism. The amount of work and expected outcomes reflect the number of credit hours.

Prerequisites:....................Any two history classes AND written consent of instructor AND ENG 131 eligible

HIT-150: Basic Coding: Theory and Practice `HS`

Credit Hours:...3.00

Contact Hours:..4.00

An intermediate-level coding class that incorporates hands-on practice in the assignment of insurance codes using case studies and medical record simulations. Presents theory and practice of coding diseases and procedures using ICD-9-CM and introduction of ICD-10-CM for inpatient facilities. Explores the Prospective Payment System (PPS) and the significance of Diagnosis Related Groupings (DRG). Also utilizes electronic and paper-based medical documentation to serve as resources for coding for inpatient reimbursement, and the application of all federal laws related to patient health information in the process of medical business practices.

Prerequisites:..............................MOA 100 and MOA 110 with a C or better.

Courses

BCT	Business and Computer Technology Division
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HIT-230: Ambulatory Coding   `HS`

Credit Hours:..3.00

Contact Hours:..3.00

Examines the theory and practice of coding techniques of coding systems used to capture billing data for care given to patients in settings other than acute care. Settings include but may not be limited to ambulatory surgery, emergency care, outpatient care, long term care, observation, and care rendered by health care practitioners especially physicians.

Prerequisites:...MOA 100, MOA 110, and HIT 150 - all with a C grade or better

HON-151: Honors Colloquium: History and Culture of Detroit   `COM`

Credit Hours:..3.00

Contact Hours:..3.00

An interdisciplinary humanities course that examines the history and culture of Detroit.

Prerequisites:..Honors Program Acceptance

HON-161: Honors Colloquium   `COM`

Credit Hours:..3.00

Contact Hours:..3.00

An interdisciplinary humanities course that examines a given topic or problem from a variety of approaches.

Prerequisites:..Honors Program Acceptance

HON-231: Honors Directed Study   `COM`

Credit Hours:..1.00

Contact Hours:..0.93

Challenges sophomore students to apply knowledge and research skills acquired in their freshman year in the Honors Program. Students work individually with a faculty member of their choice on a mutually-agreed-upon study topic. Coursework includes presenting a research summary before a meeting of Honors Program students and faculty at the end of each semester.

Prerequisites:......................Permission from the Honors Program Director

HON-232: Honors Directed Study   `COM`

Credit Hours:..1.00

Contact Hours:..0.93

In this sophomore-level directed study, students are challenged to apply the knowledge and research skills acquired in their freshman year in the Honors Program. Students work individually with a faculty member of their choice on a mutually-agreed-upon study topic. Students present summaries of their research before a meeting of Honors Program students and faculty held at the end of each semester.

Prerequisites:........................... Permission of the Honors Program Director

HON-233: Honors Directed Study   `COM`

Credit Hours:..1.00

Contact Hours:..0.93

In this sophomore-level directed study, students are challenged to apply the knowledge and research skills acquired in their freshman year in the Honors Program. Students work individually with a faculty member of their choice on a mutually-agreed-upon study topic. Students present summaries of their research before a meeting of Honors Program students and faculty held at the end of each semester.

Prerequisites:................................HON 231 & 232 with a "C" grade or better

HON-234: Honors Directed Study   `COM`

Credit Hours:..1.00

Contact Hours:..0.93

In this sophomore-level directed study, students are challenged to apply the knowledge and research skills acquired in their freshman year in the Honors Program. Students work individually with a faculty member of their choice on a mutually-agreed upon study topic. Students present summaries of their research before a meeting of Honors Program students and faculty held at the end of each semester.

Prerequisites:.. HON 231 & 232

HON-235: Honors Directed Study Abroad   `COM`

Credit Hours:..1.00

Contact Hours:..0.93

In this sophomore-level directed study, students are challenged to apply the knowledge and research skills acquired in their freshman year in the Honors Program. Students work individually with the faculty member leading the Directed Study Abroad class on a mutually-agreed-upon study topic. Students present summaries of their research before a meeting of Honors Program students and faculty held at the end of each semester or at another public forum. This course will be held abroad in a pre-selected country.

NOTE: Additional special fees exist for travel and study abroad administration. Please see the Associate Dean/Program Administrator for specific information.

Prerequisites:..........ENG 131 and ENG 132 or ENG 131-H and ENG 132-H or any combination of these four courses; and HON 151 (Colloquium) and HON 251 (Great Works) (with a C or better)

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IT   Industrial Technology Division
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Courses

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HON-236: Honors Directed Study - Service Learning   COM

Credit Hours:..1.00

Contact Hours:...0.93

Challenges sophomore students to apply knowledge and research skills acquired in their freshman year in the Honors Program. Students work individually with a faculty member of their choice on a mutually-agreed-upon study topic anchored in community service. Coursework includes presenting a research summary before a meeting of Honors Program students and faculty at the end of each semester.

Prerequisites:.......................Permission from the Honors Program Director

HON-251: Great Works   COM

Credit Hours:..3.00

Contact Hours:...3.00

Introduces seminal works from a range of disciplines, including literature, philosophy, history, religion, anthropology, psychology, and science. Explores each great work in terms of its capacity not only to assess issues crucial to its own era but also in terms of its power to illuminate the parameters of ethical, social, and cultural principles in the modern world.

Prerequisites:.. ENG 131 Honors (C or better)

HOSP-101: Wines of the World   BCT

Credit Hours:..1.00

Contact Hours:...0.87

Examines the major grape varieties, the effect of soil and climate, classification system, and the unique methods of various wine makers. Also focuses on the major wine producing areas, giving complete guidelines for reading a wine label as well as purchasing, storing, and serving.

Prerequisites:.. None

HOSP-103: Major Wines Grape Varieties   BCT

Credit Hours:..1.00

Contact Hours:...0.87

Examines varietal wines from many broad geographical areas, including vintage and specialty wines. Covers how to identify alcohol, acid, sugar, and tannin in wines. Also discusses the challenges of wine service in today's hospitality industry.

Prerequisites:.. None

HOSP-105: Applied Food Service Sanitation   BCT

Credit Hours:..2.00

Contact Hours:...2.00

Explores food contaminants, bacterial growth, safe food storage, and safe food handling procedures, as well as procedures for scheduling, cleaning, sanitizing, and pest control for facilities and equipment. NOTE: As part of this course, the National Restaurant Association Educational Foundation exam is included. Students who successfully pass the exam earn the ServSafe Food Protection Manager Certificate. This certificate is recognized by the state health department.

Prerequisites:......................................Satisfactory completion of ENG-081 or higher, or a score of 82 or higher on the COMPASS test, or 92 or higher on the ESL COMPASS test.

HOSP-107: Artisanal Cheese and Craft Beer   BCT

Credit Hours:..1.00

Contact Hours:...1.00

Covers introductory techniques used to bring cheese and craft beer together in a cohesive pairing. Examines the production, flavors, and origin of eight styles of cheese and four styles of beer.

Prerequisites:.. None

HOSP-145: Ice Carving and Design   BCT

Credit Hours:..3.00

Contact Hours:...4.00

Explores techniques used to shape, round, and sculpt ice displays with the use of hand and power tools. Also covers safety procedures related to ice handling; tools and equipment used in carving; qualities of the ice; and proper care and sharpening of tools. Final project involves carving an ice sculpture from a single block of ice.

Prerequisites:.. None

HOSP-190: Co-op in Hospitality   BCT   C

Credit Hours:..1.00

Contact Hours:...9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5

Prerequisites:.... Permission from Career Services Officer or Cooperative Education Officer

HOSP-211: Introduction to the Hospitality Industry   BCT

Credit Hours:..3.00

Contact Hours:...3.00

Surveys career opportunities in the hospitality industry. Presents hospitality as a single yet inter-related industry, emphasizing problem-solving tools rather than answers, and points out trends both past and present. Explores marketing, franchising, food service operations, hotel operations, and tourism.

Prerequisites:......................................Satisfactory completion of ENG-081 or higher, or a score of 82 or higher on the COMPASS test, or 92 or higher on the ESL COMPASS test.

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Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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COM	Communications Division	**MS**	Math and Science Division
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HOSP-215: International Cooking **BCT**

Credit Hours:..4.00

Contact Hours:..4.00

Presents a comprehensive overview of cuisines throughout the world. Explores how demographic changes and the accessibility of travel have altered America's cultural and culinary perspectives of the world at large.

Prerequisites:......................................Satisfactory completion of ENG-081 or higher, or a score of 82 or higher on the COMPASS test, or 92 or higher on the ESL COMPASS test.

HOSP-220: Introduction to Baking and Cooking **BCT**

Credit Hours:..2.00

Contact Hours:..2.00

Introduces basic concepts in food and baking preparation, and techniques used in the food service operation. Covers culinary terminology, proper use of tools and equipment, interpretation of recipes, and formulas and production methods. Emphasizes proper safety and sanitation protocols.

Prerequisites:......................................Satisfactory completion of ENG-081 or higher, or a score of 82 or higher on the COMPASS test, or 92 or higher on the ESL COMPASS test.

HOSP-221: Front Office Procedures and Guest Services **BCT**

Credit Hours:..3.00

Contact Hours:..3.00

Presents a systematic approach to the front office procedures by detailing the flow of business in the lodging operation. Examines the various jobs in the hotel/motel front office, and emphasizes guest relations and services, night audit, and check-out procedures.

Prerequisites:...HOSP-211

HOSP-224: Culinary Skills and Nutritional Cooking **BCT**

Credit Hours:..3.00

Contact Hours:..4.50

Introduces basic concepts in food preparation and techniques in food service operation. Explores proper use of kitchen procedures with hands-on food production methods, and discusses how to utilize the principles, standards, and practices involved in professional quantity food production. Instructor rotates students in the following production areas: pantry, soups, stocks, sauces, vegetables, and the entree department.

Prerequisites:......................................Satisfactory completion of ENG-081 or higher, or a score of 82 or higher on the COMPASS test, or 92 or higher on the ESL COMPASS test.

HOSP-226: Fundamentals of Baking **BCT** **C**

Credit Hours:..3.00

Contact Hours:..4.50

Covers the basic concepts, standards, and practices involved in professional quantity baking production. Examines the preparation and techniques used in bakery operations. Instructor rotates students through various production areas, which include but are not limited to: quick breads, cookies, yeast products, layered dough, pies, basic cakes, cheesecakes, simple pastries, and doughnuts. NOTE: Requires chef jacket, chef hat, and chef apron by the second full week of classes.

Prerequisites:......................................Satisfactory completion of ENG-081 or higher, or a score of 82 or higher on the COMPASS test, or 92 or higher on the ESL COMPASS test.

HOSP-235: Ice Carving for the Professional **BCT**

Credit Hours:..3.00

Contact Hours:..4.00

Demonstrates how to carve ice sculptures in single and multi-block designs, custom-colored logo designs, and functional ice carvings used on culinary food buffets. Offers advanced techniques in the use of hand and power tools.

Prerequisites:...HOSP 145

HOSP-245: Hotel and Restaurant Desserts **BCT**

Credit Hours:..3.00

Contact Hours:..3.00

Examines the specific principles of the baking process. Covers volume banquet desserts, chocolate decorating, sugar casting, and the intricacy of cake decoration. Also focuses on assembling and presenting desserts, including tortes, petit fours, French pastries, candies, frozen desserts, and decorative centerpieces. Emphasizes understanding formulas, proper weights, and measures.

Prerequisites:...HOSP-105 and HOSP-226

HOSP-250: Hospitality and Travel Marketing **BCT**

Credit Hours:..3.00

Contact Hours:..3.00

Explores the need and value of a cooperative marketing effort among hotels, airlines, restaurants, travel agents, and other important industry groups. Discusses research and analysis, the development and implementation of marketing plans and strategies, advertising, promotions, public relations, and pricing structures.

Prerequisites:...ENG-131 and HOSP-211

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HOSP-251: Dining Room Service and Operations `BCT`

Credit Hours:..3.00

Contact Hours:..4.00

Applies basic principles of table service in the production dining room. Emphasizes effective serving procedures and techniques, including cordial and prompt attention to customers, proper dress and grooming practices, and in-depth knowledge of menu items.

Prerequisites:...HOSP-340

HOSP-255: Professional Cake Decorating `BCT`

Credit Hours:..3.00

Contact Hours:..4.00

Provides practical information for the individual serious about creating and producing high quality, decorated cakes from start to finish. Discusses many types of decorated cakes as well as the application of different kinds of icings, including buttercream icing and rolled fondant. Covers proper preparation of borders, variation of flowers, other decorations, the art of cake writing, wedding cakes, gumpaste flowers, and fondant work.

Prerequisites:..HOSP-105 and HOSP-226

HOSP-270: Facilities Management `BCT`

Credit Hours:..3.00

Contact Hours:..3.00

Studies the critical roles of housekeeping, maintenance, and design and development in hotel, restaurant, and non-commercial facilities. Explores the impact of these roles on operating budgets, guest perception, and guest service.

Prerequisites:...HOSP-211

HOSP-290: Co-op in Hospitality `BCT` `C`

Credit Hours:..2.00

Contact Hours:.. 19.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5

Prerequisites:...............................Permission from Career Services Officer or Cooperative Education Officer

HOSP-309: Meetings and Event Planning `BCT`

Credit Hours:..3.00

Contact Hours:..4.00

Offers experience in identifying and analyzing factors that impact the events planned and organized by meeting planners. Main topics include meal functions, beverage functions, on premise and off premise catering, room setups, staffing, high and lower end events, supplier selection and contracts negotiation. Students plan and produce a special event for 300 guests.

Prerequisites:.....................................Satisfactory completion of ENG-081 or higher, or a score of 82 or higher on the COMPASS test, or 92 or higher on the ESL COMPASS test.

HOSP-310: Hospitality Supervision and Leadership `BCT`

Credit Hours:..3.00

Contact Hours:..3.00

Explores topics such as, but not limited to: hotel marketing, management definition, management responsibilities, effective skills needed, effective communications, responsibilities for recruitment, selection, orientation and training employees, measuring labor productivity and controlling costs, evaluating and coaching employees, rules and regulations of discipline, structure of unions, and the collective bargaining process.

Prerequisites:...HOSP-211

HOSP-325: Dining Room Captain `BCT`

Credit Hours:..3.00

Contact Hours:..4.00

Covers advanced principles of table service and managing the production dining room. Emphasizes effective management procedures and techniques including scheduling, table assignments, side work, reservations, expediting, and training of the HOSP 150 students.

Prerequisites:...HOSP-251

HOSP-330: Food and Nutrition `BCT`

Credit Hours:..3.00

Contact Hours:..3.00

Examines basic concepts of nutrition, food composition, food technology, controversies in nutrition, and marketing nutrition in the food service business. Covers carbohydrates, fats, protein, vitamins, RDA, food labeling, menu planning, weight management, cardiovascular disease, nutrition and cancer, and modifying recipes for health and lower calorie content.

Prerequisites:.....................................Satisfactory completion of ENG-081 or higher, or a score of 82 or higher on the COMPASS test, or 92 or higher on the ESL COMPASS test.

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HOSP-331: Modern and European Pastry `BCT`

Credit Hours:...6.00

Contact Hours:...7.00

Offers advanced study of commercial baking techniques and proce-dures. Stresses the fundamentals of baking along with the production and presentation of cakes and pastries. Course work provides in-depth instruction in designing, baking, and decorating wedding cakes, fon-dant cakes, European pastries, petit fours, and other specialty desserts.

Prerequisites:...HOSP-105 and HOSP-340

HOSP-340: A' la Carte and Buffet Cookery `BCT`

Credit Hours:...8.00

Contact Hours:... 10.00

Provides practical experience in all areas of quality food preparation by rotating throughout each station of the a' la carte kitchen. Students explore the proper techniques of broiling, sautéing, meat cutting, dessert presentation, buffet preparation, and cold food stations in the on campus, student-run restaurant.

Prerequisites:...HOSP-105 and HOSP-226

HOSP-341: Garde Manger and Menu Planning `BCT`

Credit Hours:...6.00

Contact Hours:...7.00

Emphasizes the art of food preparation with a focus on cold foods. Covers the preparation and presentation of salads, sandwiches, hors d'oeuvres, cold sauces and dressing, pâté/terrine, and sausage. Offers in-depth instruction in catering, menu planning, and American cuisine leading sauces and their respective small sauces.

Prerequisites:...HOSP-105 and HOSP-331

HOSP-360: Hospitality Purchasing `BCT`

Credit Hours:...3.00

Contact Hours:...3.00

Explains standard procedures for purchasing food, and beverages and services for hotels, restaurants, and institutions. Emphasizes distribu-tion, product line, government regulations, packaging, comparative versus price buying, yields, inventory, and quality controls.

Prerequisites:..HOSP-211

HOSP-370: Food and Beverage Controls `BCT`

Credit Hours:...3.00

Contact Hours:...3.00

Emphasizes cost calculations of food, wine, spirits, supplies, and labor in order to understand a profit and loss statement. Presents the fore-casting, production planning, inventory, and ordering cycle with the aid of MS Excel and web-based ordering systems. Also examines how buying decisions are made by utilizing calculations of yield and best value, along with government regulations and ethics.

Prerequisites:...HOSP-340

HOSP-421: Professional Strategies for Culinarians `BCT`

Credit Hours:...4.00

Contact Hours:...4.00

Covers careers in the culinary field across multiple interrelated segments including lodging, restaurants, managed / contract services, and travel and tourism. Examines how to perform an analysis of trends and current opportunities for entry-level management positions. Also discusses strategic career planning including use of the DISC profile questionnaire.

Prerequisites:...................................BEC 151 and either ENG 132 or ENG 135

HOSP-490: Co-Op in Culinary Arts `BCT`

Credit Hours:...2.00

Contact Hours:... 19.87

Cooperative Education is a structured method of combining class-room-based education with practical work experience. A cooperative education experience commonly known as "co-op" provides academic credit for structured employment experience. Work experience must be highly specialized or at the supervisory level in the Culinary field.

Prerequisites:...HOSP-370

HPE-140: Lifetime Wellness `SSAF` `C`

Credit Hours:...2.00

Contact Hours:...2.00

Focuses on how to prevent disease and death by following a positive lifestyle. Provides assessment of current level of wellness and introduces the tools necessary to improve healthier lifestyles choices throughout adulthood.

Prerequisites:... None

HPE-141: Introduction to Health and Wellness `SSAF` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Assesses current level of wellness and provides the tools necessary to improve and motivate the student to practice healthier lifestyles throughout adulthood. Covers environmental, reproductive, and psychological health; stress management; infectious disease; nutrition; and physical fitness.

Prerequisites:... None

HPE-142: Advanced First Aid `SSAF` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Covers how to identify life-threatening conditions and carry out emergency procedures at the scene of an accident. Part of the course work also allows students the option to meet the requirements for the American Red Cross Emergency Response certificate and the Basic Life Support certificate. NOTE: Certificates are only issued to students whose performance meets the required criteria.

Prerequisites:... None

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HPE-150: Exercise Physiology   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Explores the basic physiological principles of exercise. Discusses what changes occur to the body during exercise and as a result of regular exercise. Emphasizes how applied exercise physiology improves health and fitness of the general population, and how to optimize performance.

Prerequisites:... None

HPE-151: Methods for Teaching Exercise   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Provides a hands-on approach to demonstrating the skills that are necessary to lead group exercise instruction as well as personal training. Presents a variety of methods to lead exercise. NOTE: Also helps prepare students interested in taking industry certification exams (e.g. ACSM, ACE, and NSCA) in personal training, group exercise instruction, and weight management, but certification exams are not included in this course.

Prerequisites:... None

HPE-152: Tests and Measurements   SSAF C

Credit Hours:...2.00

Contact Hours:..2.00

Examines various tests and measurements in health and physical education, including methods for evaluating the health-related and skill-related components of physical fitness. Covers anthropometric measurement, stress testing, and posture evaluation. Also discusses how to evaluate and assess test results.

Prerequisites:... None

HPE-153: Nutrition   SSAF C

Credit Hours:...2.00

Contact Hours:..2.00

Emphasizes the importance of proper nutrition through the understanding of basic nutrition principles and their application to everyday life. Explains dietary requirements of protein, carbohydrates, fats, vitamins, and minerals. Other topics include digestion and metabolism; weight loss, weight gain and maintenance; water balance; and exercise.

Prerequisites:... None

HPE-154: Facilities and Equipment   SSAF C

Credit Hours:...2.00

Contact Hours:..2.00

Explains the planning and operation of an athletic or health club facility. Discusses swimming pool operations, the selection and care of exercise and strength equipment, and locker room management.

Prerequisites:... None

HPE-156: Personal Training   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Offers preparation for the American Council on Exercise (ACE) Personal Trainer Certification Exam and other national exams. Covers the skill set and information necessary to provide personal training to clients in a fitness center as well as one-on-one instruction.

Prerequisites:... None

HPE-158: Introduction to Nutrition   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Introduces how to evaluate nutrition information, plan nutritious diets, digestion issues, macro and micro nutrients, energy balance and weight control, food safety, and proper nutrition for a lifetime. Also examines how to assess nutritive content, spread of calories, and the calorie balance of various diets.

Prerequisites:... None

HPE-192: Internship in Physical Education   SSAF C

Credit Hours:...2.00

Contact Hours:..2.00

This internship is for students nearing completion of the Fitness Leadership program. The student will complete 100 supervised hours in a work setting such as a community center, physical education classroom, physical therapy center or wellness center. A student is encouraged to choose internship sites that will provide important job opportunities as well as strengthen an area in which they are weak. The internship is unpaid and may be completed at times that are convenient for the student and the internship site.

Prerequisites:... None

HPE-253: Nutrition for the Professional   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Introduces health care professionals to the basics of nutrition and its application to disease, growth, and development.

Prerequisites:... None

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HPE-260: Nutrition, Health, and Physical Education for the Classroom Teacher   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Provides training for the elementary classroom teacher to teach health, nutrition, safety, and physical education. Offers teaching strategies, projects, movement exercises, and games designed to engage the elementary student. Course emphasis is on providing learning experiences for children's development of positive lifestyle behaviors. Fulfills the objectives for the Michigan Model for Health.

Prerequisites:.. None

HPE-265: Sports Psychology   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Explores the application of sports psychology principles. Emphasizes the history and future of sports psychology, stress, anxiety, motivation, mental training, goal setting, and leadership. Also addresses imagery, group dynamics, sport socialization, well-being and self-efficacy. Investigates personality as it relates to athletic competition and competition in the real world.

Prerequisites:.. None

HPEA-104: Basketball I   **SSAF** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Explores the fundamental skills of basketball with a comprehensive discussion and implementation of the rules and etiquette.

Prerequisites:.. None

HPEA-105: Bowling I   **SSAF**

Credit Hours:..2.00

Contact Hours:..2.00

Examines the fundamental, intermediate, and advanced skills of bowling with a comprehensive discussion and implementation of the rules, etiquette, and terminology of the game.

Prerequisites:.. None

HPEA-106: Golf I   **SSAF** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Provides instruction in the fundamental and intermediate skills of golf, including proper use of woods, irons, putting, and specialty shots. Also covers rules, terminology, and proper etiquette.

Prerequisites:.. None

HPEA-109: Tennis I   **SSAF** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Provides instruction in the fundamental skills of tennis, including proper grips, ground strokes, volleys, and serves. Stresses rules, terminology, scoring, and etiquette.

Prerequisites:.. None

HPEA-110: Volleyball I   **SSAF** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Covers the fundamental skills, strategy, history, rules, and values of volleyball. Discusses concept of team play and how to develop an appreciation for the sport as both player and spectator. Course also explores nutrition and health related fitness as it pertains to disease and weight prevention.

Prerequisites:.. None

HPEA-117: Strength Training and Physical Conditioning I   **SSAF** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Introduces beginning and intermediate training techniques in strength and cardiovascular conditioning including evaluation of all components of physical fitness. Emphasizes flexibility, strength, cardiovascular conditioning, muscular endurance, and body composition. Course also includes information on nutrition and exercise as it relates to weight management and disease prevention, and discusses common risk factors.

Prerequisites:.. None

HPEA-120: Lifetime Fitness   **SSAF** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Offers a rotating body conditioning method that allows for greater efficiency and ease of movement, strength, flexibility and muscle endurance, thereby helping to prevent chronic pain. Also provides information on overall body care and control through knowledge and practice of healthy lifestyle choices in terms of diet, exercise, weight management, and disease and injury prevention.

Prerequisites:.. None

HPEA-121: Pilates   **SSAF**

Credit Hours:..2.00

Contact Hours:..2.00

Focuses on how to improve core strength and postural alignment. Studies Pilates exercises, breath control, basic skeletal-muscular anatomy, and function involved in the Pilates program.

Prerequisites:.. None

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HPEA-122: Yoga-Based Fitness   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Explains how to improve overall body awareness and fitness while presenting specific techniques to manage stress through the practice of relaxation, meditation, and asanas (postures). Covers how to find stillness; to practice deep breathing and postures; to improve mind-body awareness and self confidence; and to make healthy lifestyle choices.

Prerequisites:.. None

HPEA-126: Aerobic Dance   SSAF

Credit Hours:..2.00

Contact Hours:..2.00

An exercise class covering the health related components of physical fitness, with an emphasis on cardiovascular endurance. Also explains how to make proper choices for a healthy diet; proper weight and stress management; and disease prevention. Requires no dance background.

Prerequisites:.. None

HPEA-127: Aquacise   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Provides the opportunity to achieve physical fitness through water exercise. Covers safety protocols, importance of exercise for disease prevention, and proper food intake for maintaining a healthy weight. Exercise alignment and various creative exercises are incorporated in the class. No swimming skill is required.

Prerequisites:.. None

HPEA-155: Relaxation Techniques for Stress Management   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Covers stress and its effects on the body. Emphasizes ways to reduce stress such as Yogic breathing, meditation, and other relaxation techniques. Discusses time and money management; conflict resolution and effective communication; resolving anxiety; a healthy diet, and how to incorporate these into one's lifestyle.

Prerequisites:.. None

HPEA-204: Basketball II   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Offers information on the fundamental, intermediate, and advanced skills of basketball. Also discusses rules and strategies.

Prerequisites:.. None

HPEA-205: Bowling II   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Includes the fundamental, intermediate, and advanced skills of bowling with a comprehensive discussion and implementation of the rules, etiquette, and terminology of the game.

Prerequisites:.. None

HPEA-206: Golf II   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Offers instruction in the fundamental, intermediate, and advanced skills of golf, including proper use of woods, irons, putting, and specialty shots. Covers rules, terminology, and etiquette.

Prerequisites:.. None

HPEA-209: Tennis II   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Provides instruction in the fundamental, intermediate, and advanced skills of tennis, including proper grips, ground strokes, volleys, and serves. Emphasizes rules, terminology, scoring, and etiquette.

Prerequisites:.. None

HPEA-210: Volleyball II   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Covers both fundamental and advanced skills as well as strategy, history, rules, and values of volleyball. Student gains valuable social experience and develops a sense of team play along with an appreciation for the sport as a player and a spectator. Nutrition and health related fitness information is included as it pertains to disease prevention and weight control.

Prerequisites:.. None

HPEA-217: Strength Training and Physical Conditioning II   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Explores the principles of intermediate and advanced strength and cardiovascular conditioning including evaluation of all components of physical fitness. Emphasizes flexibility, strength, cardiovascular conditioning, muscular endurance, and body composition. Also covers nutrition and exercise as it relates to weight management and disease prevention, and risk factors.

Prerequisites:.. None

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HUM-101: Introduction to the Humanities `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Introduction to the visual arts, music and theatre. This course teaches the aesthetic and technical aspects of the arts, as well as the understanding of the arts in the light of historical and cultural conditions.

Prerequisites:...ENG-131

HUM-250: Visual and Performing Arts for Teachers `SSAF`

Credit Hours:..3.00

Contact Hours:...3.00

This course will teach the elementary education student how to incorporate the various visual and performing arts into everyday elementary education curricula. The course will cover the fundamental and formal elements, the major periods, styles and philosophies, as well as the functions and processes of the visual and performing arts, and how to effectively employ those creative processes through collaboration, communication, cooperation, and interaction in the elementary classroom. This is an interactive course where the instructor, guest speakers, and students present topics. Knowledge will be applied through small and large group discussions and projects. Students complete assignments both during and outside of class. Class participation, completion of assignments, quizzes, and attendance are all factored into the grading process. At least one field trip will be planned as an integral part of the course.

Prerequisites:...ENG 131

ICO-190: Co-op in Industrial Technology `IT` `C`

Credit Hours:..1.00

Contact Hours:...4.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

Prerequisites:..................................Permission from Career Services Officer or Job Developer in the Office of Career Services

ICO-290: Co-op in Industrial Technology `IT` `C`

Credit Hours:..2.00

Contact Hours:...9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:..................................Permission from Career Services Officer or Job Developer in the Office of Career Services

INTR-120: Manual Architectural Drafting for Interior Designers `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...6.00

Basic manual drafting course that introduces graphic tools, techniques, and conventions used for effective visual communication in interior design. Students develop skills in architectural drafting, lettering, line quality, symbols, and sheet organization in the creation of a full set of residential construction drawings.

Prerequisites:.. None

INTR-130: Intro to CAD for Interior Design `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...6.00

An introduction to computer-aided design that focuses on translating the architectural hand-drafting skills to the computer.

INTR-131: Advanced CAD for Interior Design `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...6.00

Studies advanced computer-aided design for interior design with emphasis on three-dimensional modeling.

Prerequisites:.. INTR130 or ACT 116 or equivalent

INTR-180: Design and User Needs `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Introduces human factors as they affect the design of interior environments including physiological, sociological, and psychological needs of users. Emphasizes the human factors of ergonomics, anthropometrics, universal design, and special populations as they relate to design standards, functionality, accessibility, and impact on the interior design practice.

Prerequisites:.. None

INTR-181: Principles of Design `SSAF` `C`

Credit Hours:..3.00

Contact Hours:...3.00

An introduction to the principles and elements of design that provide the foundation for aesthetic concepts in the interior design profession. Development of professional visual presentation techniques through the creation of interior design boards and models. Introduction to the design process and aesthetic conceptualization techniques.

Prerequisites:.. None

BCT Business and Computer Technology Division
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INTR-182: Interior Design Materials and Components SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Investigates the characteristics, properties, and uses of materials, components and construction methods as specified by interior designers. Emphasizes performance, use, maintenance, and sustainability of materials and finishes. Also explores quantity calculations, installation methods, workroom practices, and resource development.

Prerequisites:.. None

INTR-183: Perspective Drawing and Rendering SSAF C

Credit Hours:..3.00

Contact Hours:...6.00

Studies the basic principles of manual perspective drawing and rendering. Emphasis on various perspective drawing, sketching, and rendering techniques as a means to visually communicate interior spaces.

Prerequisites:.. ACT 110 or ART 181, or INTR 120 or Instructor permission

INTR-185: Kitchen and Bath Materials and Estimating SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Focuses on methodology utilized in the estimating and budgeting practices of the kitchen and bath industry, using cost analysis of materials, components, appliances, fixtures and finishes.

Prerequisites:.. None

INTR-187: Computer Drafting for Kitchen and Bath SSAF C

Credit Hours:..2.00

Contact Hours:...2.00

An introductory-level, computer-aided drafting course with particular emphasis on designing kitchen and bath environments. Two-dimensional and three-dimensional drawings will be developed using state-of-the-art software meeting industry standard drafting graphic presentation criteria.

Prerequisites:.. ACT 110 or ART 181 or INTR 120 or Instructor permission

INTR-250: Kitchen Design Studio SSAF C

Credit Hours:..3.00

Contact Hours:...6.00

A studio course integrating the interior design process into a large-scale kitchen design project focusing on functional and aesthetic elements and the integral relationship to user needs. Incorporates human factors and Universal Design principles.

Prerequisites:.. ACT 110 or ART 181 or INTR 120 or INTR 187 or equivalent

INTR-251: Bath Design Studio SSAF C

Credit Hours:..3.00

Contact Hours:...6.00

Course integrates the interior design process into large-scale residential and commercial bath design projects focusing on functional and aesthetic elements and the integral relationship to user needs, incorporating human factors and environmentally responsible design.

Prerequisites:.. ACT 110 or ART 181 or INTR 120 or INTR 187 or Instructor permission

INTR-255: Advanced Kitchen and Bath Studio SSAF C

Credit Hours:..2.00

Contact Hours:...4.00

A studio course wherein students apply advanced critical thinking and highly developed design skills to a national kitchen and bath design competition.

Prerequisites:.. INTR 250 or 251

INTR-2626: Special Topics in Interior Design SSAF

Credit Hours:..3.00

Contact Hours:...6.00

Provides specialized study in the area of interior design organized by discipline or other criteria. This studio course may be taken twice for credit, six hours maximum. Specific topics and any prerequisites are listed in the current semester's class schedule or may be obtained through the departmental office. Course meets for six hours per week.

Prerequisites:.. None

INTR-280: History of Design - Antiquities to Present SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Surveys the chronological history of architecture, furniture, and interiors from Ancient Egypt to the present. Emphasizes the relationship between major cultural, political, social, and economic events upon significant movements in architecture and design.

Prerequisites:.. None

INTR-281: Residential Design Studio SSAF C

Credit Hours:..3.00

Contact Hours:...6.00

Introduces the interior design process and development of functional and aesthetically pleasing environments. Emphasizes programming, ideation, analysis, concept development, space planning, design development, documentation, and graphic communication culminating in the presentation of a residential project.

Prerequisites:...ACT 110 or ACT 116; or ART 181; or INTR 120 or equivalent

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Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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INTR-283: Lighting and Environmental Systems for Interiors `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the fundamentals of lighting design and basic understanding of acoustical, electrical, plumbing, and climate control systems and their impact on environmental, energy and economic issues. Emphasizes lighting design process, principles and theories, light sources, lamps, and energy conservation.

Prerequisites:... None

INTR-284: Commercial Design Studio `SSAF`

Credit Hours:..3.00

Contact Hours:..6.00

Explores how to integrate the interior design process into a small-scale, non-residential design project focusing on functional and aesthetic elements, and the integral relationship to user needs. Also discusses how to incorporate human factors, Universal Design principles, and building codes into the design process. Emphasizes environmentally responsible product selection and specification.

Prerequisites:...INTR 281 or Instructor permission

INTR-285: Professional Practice for Interior Designers `SSAF`

Credit Hours:..3.00

Contact Hours:..3.00

Exams the interior design profession, including the study of legal, financial, and ethical business practices with special emphasis on management, human resource practices, marketing, and advertising.

Prerequisites:... None

INTR-287: Interior Design Synthesis `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..6.00

A rigorous capstone experience which requires critical thinking and highly developed design skills to be applied to real life situations. The experience also involves updating design portfolios, developing a professional resume, and participating in mock employment interviews. Final studio project focuses on the development of an interior design project for a real client.

Prerequisites:....................INTR-284, or INTR-281, or Instructor Permission

INTR-294: Kitchen and Bath Internship `SSAF`

Credit Hours:..2.00

Contact Hours:..2.00

Offers practical work experience within the student's program of study through a 160-hour internship in the kitchen and bath industry. Must have completed most of the coursework in the Kitchen and Bath Design program before applying for this course.

Prerequisites:...INTR 250 and 251

INTR-2993: Advanced Study in Interior Design `SSAF`

Credit Hours:..3.00

Contact Hours:..3.00

An individualized advanced course study of a topic or project under the direction of a faculty member who, together with the student, designs the format of the study or project. Students must have completed the appropriate sequence of courses offered by the department.

Prerequisites:................................. INTR-120, INTR-180, INTR-181, INTR-182, and Instructor permission

ITAL-131: Elementary Italian I `COM`

Credit Hours:..4.00

Contact Hours:..4.00

Teaches elementary reading, writing, speaking, and listening skills in Italian, focusing on communication in a cultural context. Covers vocabulary and explores the pronunciation and grammatical principles necessary for comprehending and expressing simple ideas in both spoken and written Italian.

Prerequisites:... None

ITAL-132: Elementary Italian II `COM`

Credit Hours:..4.00

Contact Hours:..4.00

ITAL 132 further builds reading, writing, speaking, and listening skills in Italian, focusing on communication in a cultural context. Students continue to expand their knowledge of vocabulary, pronunciation and grammatical principles in order to comprehend and express everyday ideas in both spoken and written Italian.

Prerequisites:...............A grade of C or better in ITAL 131 or in one year of high school Italian, or instructor permission (Note: a grade of C- is not transferrable and is not accepted by some programs at HFC.)

ITAL-141: Elementary Italian Conversation `COM`

Credit Hours:..3.00

Contact Hours:..3.00

An enrichment course, ITA 141 is conducted almost entirely in Italian and is designed for students wishing to expand their active vocabulary and improve their facility in speaking and listening. Class discussions are based on assigned readings, student reports, and current events. This course is transferable but is not a substitute for a basic language requirement. It may be taken concurrently with Italian 132.

Prerequisites:................................A grade of C or better in ITA 131 or in one year of high school Italian, or instructor permission (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

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ITAL-290: Study Abroad in Italian Language and Culture   COM

Credit Hours:..3.00

Contact Hours:..3.00

ITAL 290 takes students to study Italian language and culture in Italy under the direction of a member of the Communications Division faculty. Prior to departure, students meet with the instructor for basic language and cultural lessons and to choose an individual topic of research in the area of Italian language, literature, or culture. While overseas, students put their knowledge of language and culture into practice. On their return, students reflect on their study abroad experience, develop their topic of special interest, and present it in the form of a paper, portfolio, or project. Specific travel information will be announced at least one semester prior to departure.

Prerequisites:...................C grade or better in ITAL 131, 132, or equivalent or Instructor permission (Note: a grade of C- is not transferrable and is not accepted by some programs at HFC.)

ITAL-295: Directed Study in Italian   COM

Credit Hours:..1.00

Contact Hours:..1.00

ITAL 295 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Italian language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:... A grade of C or better in ITA 131, 132, 231, or 232 or equivalent (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ITAL-296: Directed Study in Italian   COM

Credit Hours:..2.00

Contact Hours:..0.87

ITAL 296 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Italian language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:..A grade of C or better in ITAL 131 or 132 or equivalent (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

ITAL-297: Directed Study in Italian   COM

Credit Hours:..3.00

Contact Hours:..0.87

ITAL 297 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Italian language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:... A grade of C or better in ITAL 131 or 132 or equivalent (Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.)

JOUR-131: News Writing   COM

Credit Hours:..3.00

Contact Hours:..3.00

Introduces news writing in its various forms such as news stories, thought-provoking opinion columns, and stimulating reviews. Students also read and analyze professional newspapers.

Prerequisites:...A satisfactory score on the English placement test or a grade of S or C- in English 092 or English 093 and a grade of S in English 081 or S or C- in ENG 082, if required.

JOUR-132: Advanced News Writing   COM   C

Credit Hours:..3.00

Contact Hours:..3.00

Examines the gathering, processing and writing of news and opinion on current matters using professional standards in both print and online news production. Analysis of current and historical case studies that illustrate demographic, social, psychological, and ethical aspects of journalism writing in the digital age. Creative problem solving strategies are encouraged throughout the course and culminate with the writing of a feature story in both print and online formats as well as evaluating audience response for that feature story.

Prerequisites:...JOUR 131 with a C or better

JOUR-295: Business Manager   COM

Credit Hours:..1.00

Contact Hours:..0.93

Journalism internship for students hired to fulfill the responsibilities of the Business Manager of the campus newspaper, the Mirror News. The Business Manager of The Mirror News student newspaper is responsible for the advertising operations of the newspaper. The Internship will provide opportunities for students interested in business-related careers in addition to careers in journalism. Class may be repeated for credit.

Prerequisites:...Instructor permission

JOUR-296: Copy Editor   COM

Credit Hours:..1.00

Contact Hours:..0.93

Internship for students hired to fulfill responsibilities of Copy Editor position at The Mirror News. Internship is under the direction of an instructor in the respective discipline. Students will learn knowledge and skills to perform the duties of the Copy Editor of the Mirror News. The Copy Editor is primarily responsible for selecting and proofreading articles submitted for publication in the Mirror News student newspaper. Class may be repeated for credit.

Prerequisites:...Instructor permission

JOUR-297: Layout Editor   COM

Credit Hours:..1.00

Contact Hours:..0.93

Internship for students hired to fulfill the responsibilities of the Layout Editor for The Mirror News. The Layout Editor is primarily responsible for the design and organization of content in the production of the Mirror Newspaper. Internship is under the direction of an instructor in the respective discipline. The Internship provides students journalism and design experience beyond that generally available in the classroom. Students will develop comprehension and practice of design skills not only toward pursuing careers in journalism but also other design-related fields. Class may be repeated for credit.

Prerequisites:...Instructor permission

JOUR-298: Creative and Online Editor   COM

Credit Hours:..1.00

Contact Hours:..0.93

Internship for students hired to fulfill the responsibilities of the Creative and Online Editor of The Mirror News. The Creative and Online Editor is primarily responsible for the collecting, selection, formatting, editing and design of creative section of The Mirror News as well as responsible for managing online content on The Mirror News website. The internship is under the direction of an instructor in the respective discipline. The Internship will provide opportunities for students interested in publishing creative writing to obtain experience beyond that generally available in the classroom. Class may be repeated for credit.

Prerequisites:...Instructor permission

JOUR-299: Editor in Chief   COM

Credit Hours:..1.00

Contact Hours:..0.93

Internship for student hired as the editor in chief of The Mirror News. Internship will be under the direction of the faculty advisor of The Mirror News. The Editor in Chief of the Mirror News is responsible for the production of the student newspaper and the direction of those responsible for the content, design, and business of the newspaper. The Internship has among its goals: to encourage academic responsibility and critical thinking in the field of journalism, to develop the student's comprehension and practice of ethics in journalism, and to develop the student's skills to pursue a career in journalism or a journalism-related field. Class may be repeated for credit.

Prerequisites:...Instructor permission

MATH-010: Algebra Skills Review   MS

Credit Hours:..2.00

Contact Hours:..2.00

A support course for students taking certain sections of MATH-110: Intermediate Algebra. Intended to provide needed just-in-time mathematical support to qualified students placed into MATH-080: Beginning Algebra so that the students can complete MATH-110 successfully without taking MATH-080. Topics covered in this course include solving linear equations and inequalities, graphs of linear equations, simplifying expressions using laws of integer exponents and simplifying polynomial expressions.

Prerequisites:...MATH-080 placement and a High school GPA of 3.0 or higher, and less than 2 years since the successful completion of the last math class.

MATH-074: Prealgebra   MS

Credit Hours:..4.00

Contact Hours:..4.00

Focuses on preparing students for algebra in MATH 080 or 100. Covers fractions, percents, measurement and geometry, signed numbers, linear equations and proportions. Includes techniques of problem solving and applications throughout the course. Requires a scientific calculator.

MATH-0771: Whole Numbers, Integers, and Introduction to Algebra   MS

Credit Hours:..1.00

Contact Hours:..0.90

Module 1 of a 12-module sequence. MATH 0771, 0772, 0773, and 0774 together prepare students for MATH 0891, 0892, 0893, and 0894 (or MATH 080) or MATH 100. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers arithmetic operations with whole numbers, integers, order of operations, and an introduction to algebra. Also includes problem solving techniques and applications. Requires access to an online homework management system and the associated textbook. Course does not count toward graduation requirements.

Prerequisites:.. None

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MATH-0772: Fractions, Mixed Numbers, and Fractions with Variables `MS`

Credit Hours:...1.00

Contact Hours:...0.90

Module 2 of a 12-module sequence. MATH 0771, 0772, 0773, and 0774 together prepare students for MATH 0891, 0892, 0893, and 0894 (or MATH 080) or MATH 100. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers factors, fractions (including fractions with variables), operations with fractions, mixed numbers, and operations with mixed numbers. Also includes problem solving techniques and applications. Requires access to an online homework management system and the associated textbook. Course does not count toward graduation requirements.

Prerequisites:..A grade of C or better in MATH 0771

MATH-0773: Decimals, Ratios, Proportions, and Percents `MS`

Credit Hours:...1.00

Contact Hours:...0.90

Module 3 of a 12-module sequence. MATH 0771, 0772, 0773, and 0774 together prepare students for MATH 0891, 0892, 0893, and 0894 (or MATH 080) or MATH 100. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers decimals, ratios, proportions, and percents, including solving percent equations. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook. Course does not count toward graduation requirements.

Prerequisites:..A grade of C or better in MATH 0772

MATH-0774: Measurement, Geometry, Statistics, and Real Numbers `MS`

Credit Hours:...1.00

Contact Hours:...0.90

Module 4 of a 12-module sequence. MATH 0771, 0772, 0773, and 0774 together prepare students for MATH 0891, 0892, 0893, and 0894 (or MATH 080) or MATH 100. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers U.S. and metric measurement, statistics, real numbers, and an introduction to geometry. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook. Course does not count toward graduation requirements.

Prerequisites:..A grade of C or better in MATH 0773

MATH-080: Beginning Algebra `MS`

Credit Hours:...3.00

Contact Hours:...3.00

A developmental course for students who need to develop skills in beginning algebra topics. Topics include solutions of linear equations, inequalities, and systems; graphs of linear equations; polynomial operations; and integer exponents. Utilizes techniques of problem solving and applications throughout the course. Requires a scientific calculator and access to an online homework management system.

Prerequisites:... MATH-0771, MATH-0772, MATH-0773, AND MATH-0774 OR MATH 074 OR MATH 077 with a C or better OR a satisfactory score on the placement test

MATH-081: Mathematical Literacy for College Students `MS`

Credit Hours:...4.00

Contact Hours:...4.00

Prepares students pursuing a liberal arts curriculum or a program without a specific mathematics requirement for MATH 131-Mathematics for the Modern World. Includes creating and interpreting various types of graphs; geometry, including area, volume and the Pythagorean Theorem; algebra; basic statistics; and arithmetic with signed numbers, fractions, and scientific notation.

Prerequisites:.... S grade in ENG 081 or satisfactory score on the reading placement exam

MATH-0891: Algebraic Expressions and Linear Equations and Inequalities `MS`

Credit Hours:...1.00

Contact Hours:...0.90

Module 5 of a 12-module sequence. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers algebraic expressions and solutions to linear equations and linear inequalities. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook. Course does not count toward graduation requirements.

Prerequisites:..A grade of C or better in MATH 0774

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MATH-0892: Graphing Linear Equations and Inequalities **MS**

Credit Hours:..1.00

Contact Hours:..0.90

Module 6 of a 12-module sequence. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers plotting points determined by ordered pairs, graphing lines using multiple methods, calculating slope, finding equations of lines, and graphing linear inequalities. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook. Course does not count toward graduation requirements.

Prerequisites:...A grade of C or better in MATH 0891

MATH-0893: Systems of Linear Equations **MS**

Credit Hours:..1.00

Contact Hours:..0.90

Module 7 of a 12-module sequence. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers solving systems of linear equations by graphing, substitution, and elimination. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook. Course does not count toward graduation requirements.

Prerequisites:...A grade of C or better in MATH 0892

MATH-0894: Exponents and Polynomials **MS**

Credit Hours:..1.00

Contact Hours:..0.90

Module 8 of a 12-module sequence. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers exponent rules, polynomial operations, and scientific notation. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook. Course does not count toward graduation requirements.

Prerequisites:...A grade of C or better in MATH 0893

MATH-100: Basic Technical Mathematics **MS** **C**

Credit Hours:..4.00

Contact Hours:..4.00

For those in technology programs who have not completed one year of algebra and one year of geometry or who need to review beginning algebra and geometry. Covers a review of arithmetic; signed numbers; scientific notation; measurement conversions; and an introduction to beginning algebra, geometry, and statistics. Emphasizes practical technical applications and requires the use of a scientific calculator.

MATH-101: Mathematics for Health Careers **MS**

Credit Hours:..4.00

Contact Hours:..4.00

Explores the mathematical skills required for various careers in the health professions. Includes computational skills, essential algebraic concepts, problem-solving strategies, ratio and proportion, dimensional analysis, measurement and geometry, and an introduction to data analysis with problems chosen to represent those commonly encountered in health careers. Requires a scientific calculator.

Prerequisites:..None

MATH-103: Technical Mathematics **MS**

Credit Hours:..4.00

Contact Hours:..4.00

For students in technology programs who have had MATH 100 or one year of Beginning Algebra. Covers functions and graphs, properties of lines, the trigonometric functions, systems of linear equations, rational expressions, quadratic equations, solution of right triangles, vectors, integer exponents, linear regression, complex numbers, and an introduction to the graphing calculator. Requires a graphing calculator with the TI-83/84 Plus recommended.

Prerequisites:...MATH 100 with a C grade or better or a satisfactory score on the placement test

MATH-104: Mathematics for Food Service Careers **MS**

Credit Hours:..4.00

Contact Hours:..4.00

Explores the mathematical skills required for various careers in the food service profession. Topics include calculator usage, computational skills, ratio and proportion, percentages, measurement, dimensional analysis, and an introduction to data analysis with problems chosen to represent those commonly encountered in the food service profession. Requires a calculator.

MATH-1091: Factoring **MS**

Credit Hours:..1.00

Contact Hours:..0.90

Module 9 of a 12-module sequence. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers factoring polynomials and solving quadratic equations by factoring. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook.

Prerequisites:...A grade of C or better in MATH 0894

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MATH-1092: Functions, Rational Expressions, and Rational Equations `MS`

Credit Hours:...1.00

Contact Hours:...0.90

Module 10 of a 12-module sequence. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers an introduction to functions, operations with rational expressions, and solving rational equations. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook.

Prerequisites:...A grade of C or better in MATH 1091

MATH-1093: Radicals `MS`

Credit Hours:...1.00

Contact Hours:...0.90

Module 11 of a 12-module sequence. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers simplifying radical expressions, rational exponents, the Pythagorean Theorem, operations on radical expressions, rationalizing the denominator, and solving radical equations. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook.

Prerequisites:...A grade of C or better in MATH 1092

MATH-1094: Quadratic Equations and Functions `MS`

Credit Hours:...1.00

Contact Hours:...0.90

Module 12 of a 12-module sequence. Presents content at a pace that is appropriate for the individual with the assistance of computers. Covers an introduction to nonreal numbers, solving quadratic equations using a variety of methods, and graphing quadratic functions. Also includes problem solving techniques and applications. Requires a scientific calculator, access to an online homework management system, and the associated textbook.

Prerequisites:... A grade of C or better in Math 1093

MATH-110: Intermediate Algebra `MS`

Credit Hours:...4.00

Contact Hours:...4.00

Covers solving quadratic, rational, and square root equations; an introduction to functions; graphs of linear and quadratic functions; rational expressions; rational exponents; and radical expressions. Includes techniques of problem solving and applications. Credit cannot be earned for both MATH-1091, MATH-1092, MATH-1093, MATH-1094 and MATH-110. Requires a scientific calculator and access to an online homework management system.

Prerequisites:.....................................MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH-080 OR MATH-089 with a C grade or better OR a satisfactory score on the placement test

MATH-112: Trigonometry `MS`

Credit Hours:...3.00

Contact Hours:...3.00

For students in a technical or science program that requires knowledge of trigonometry. Topics include angles, right triangle trigonometry, circular functions and their graphs, trigonometric identities and equations, the Laws of Sines and Cosines, vectors, and a variety of physical applications. Course does not satisfy the MATH 175 or 180 prerequisite. Requires a graphing calculator, with the TI-83/84 Plus recommended, and access to an online homework management system.

Prerequisites:................................MATH-100 OR MATH-103 OR MATH-1091, MATH-1092, MATH-1093, AND MATH-1094 OR MATH-110 with a C grade or better OR a satisfactory score on the placement test.

MATH-115: College Algebra `MS` `C`

Credit Hours:...5.00

Contact Hours:...5.00

Covers analytic geometry, functions and their graphs, algebraic and graphical solutions of equations and inequalities, graphs and zeros of polynomial functions, conic sections, linear and polynomial modeling, systems of equations and inequalities, sequences and series, and the Binomial Theorem. Includes techniques of problem solving and applications. Requires a graphing calculator, with the TI-83/84 Plus recommended, and access to an online homework management system.

Prerequisites:.......................MATH-109 OR MATH-1094 OR MATH-110 with a grade of C or better OR a satisfactory score on the placement test.

MATH-121: Mathematics for Elementary Teachers I `MS`

Credit Hours:...3.00

Contact Hours:...4.00

For students who are involved in a curriculum for elementary teachers. Includes problem solving, an introduction to logic, set theory, number theory, numeration systems, whole numbers, and fractions. Addresses concept development, communication skills, both oral and written, and problem solving skills in accordance with the NCTM Standards. Course integrates topics in algebra throughout.

Prerequisites:............................... MATH-109 OR MATH-1094 OR MATH-110 with a C grade or better OR a satisfactory score on the placement test.

MATH-131: Mathematics for the Modern World `MS` `C`

Credit Hours:...4.00

Contact Hours:...4.00

For students pursuing a liberal arts curriculum or a program without a specified mathematics requirement. Topics include linear and exponential growth; statistics; personal finance; and geometry, including scale and symmetry. Emphasizes techniques of problem-solving and application of modern mathematics to understanding quantitative information in the everyday world.

Prerequisites:.................................. Math-080 OR MATH-081 OR MATH-089 OR MATH-0894 with a C grade or better OR a satisfactory score on the Math placement test AND ENG 081 with an S grade or a satisfactory score on the reading placement test

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MATH-141: Introduction to Statistics **MS** **C**

Credit Hours:..4.00

Contact Hours:..4.00

Designed as a first course for students in business administration, education, social sciences, engineering, and other fields in which data are collected and predictions are made. Covers descriptive measures, the summarizing of data, an introduction to probability, discrete probability distributions, normal probability distributions, sampling distributions, estimation, confidence intervals, hypothesis testing, correlation, regression, chi square tests, one-way analysis of variance (ANOVA), and use of nonparametric tests. In addition, utilizes a statistical software package to conduct data analysis and solve applied problems. Requires a graphing calculator, with the TI-83/84 Plus recommended. Also requires access to an online homework management system as well as a statistical software package.

Prerequisites:..................... MATH 109 OR MATH 1094 OR MATH 110 with a C grade or better OR a satisfactory score on the placement test

MATH-150: Finite Mathematics **MS**

Credit Hours:..4.00

Contact Hours:..4.00

For students in business and the social sciences. Topics include mathematical models, functions and graphs, lines and inequalities, exponential and logarithmic functions, mathematics of finance, systems of linear equations and matrices, linear programming, sets, and probability. Explores the use of technology for business-related applications. Requires a graphing calculator, with the TI-83/84 Plus recommended.

Prerequisites:............... MATH-109 OR MATH-1094 OR 110 with a C grade or better OR a satisfactory score on the placement test.

MATH-153: Calculus for Business, Life Science, and Social Sciences **MS**

Credit Hours:..5.00

Contact Hours:..5.00

For students in business, life science, and the social sciences but not engineering, mathematics, or physical science majors. Introduces differential and integral calculus of algebraic, logarithmic, and exponential functions of one variable. Covers graphical, numerical, and algebraic determination of derivatives and definite integrals, applications of the derivative including minima and maxima, and integration and its applications. Includes applications throughout the course. Credit cannot be earned for both MATH 153 and 180. Includes the use of technology for business-related applications. Requires a graphing calculator with the TI-83/84 Plus recommended.

Prerequisites:........................... MATH 115 or 150 or 175 - all with a C grade or better OR a satisfactory score on the placement test

MATH-175: Precalculus **MS** **C**

Credit Hours:..5.00

Contact Hours:..5.00

Topics include algebraic, graphical and numerical representations of functions, including composition and inverses of functions. Focuses on the study of rational functions, exponential and logarithmic functions, and trigonometric functions of real numbers and angles. Also includes analytic trigonometry and solutions of triangles. Techniques of problem solving and applications are included throughout the course requiring the frequent usage of graphing calculators. Requires a graphing calculator, with the TI-83/84 Plus recommended. Also requires access to an online homework management system.

Prerequisites:........... MATH-115 with a C grade or better or a satisfactory score on the placement test

MATH-180: Calculus I **MS** **C**

Credit Hours:..5.00

Contact Hours:..5.00

For students planning to pursue a course of study involving a concentration in mathematics. Topics include limits, continuity, the derivative, differentiation of algebraic, exponential, logarithmic, trigonometric and inverse trigonometric functions, applications of the derivative, antidifferentiation, and the definite integral. Numerical, graphical and algebraic approaches are used whenever possible. Credit cannot be earned for both MATH 153 and 180. Requires a graphing calculator, with the TI-83/84 Plus recommended. Also requires access to an online homework management system.

Prerequisites:..............MATH 175 with a C or better or a satisfactory score on the placement test

MATH-183: Calculus II **MS** **C**

Credit Hours:..5.00

Contact Hours:..5.00

Topics include applications of the integral, techniques of integration, numerical integration, improper integrals, solutions of separable differential equations, infinite series, polynomial approximations of functions, power series, Taylor and MacLaurin series, and parametric and polar equations. Utilizes numerical, graphical, and algebraic approaches whenever possible. Includes applications throughout the course. Requires a graphing calculator, with the TI-83/84 Plus recommended, and access to an online homework management system.

Prerequisites:...MATH 180 with a C grade or better

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MATH-221: Mathematics for Elementary Teachers II `MS`

Credit Hours:...3.00

Contact Hours:...4.00

For students involved in a curriculum for elementary teachers. Topics include the rational numbers, the integers, the real numbers, algebra, and topics from geometry. Utilizes Geometer's Sketchpad to develop geometry content. Addresses concept development, communication skills, both oral and written, and problem solving skills in accordance with the National Council of Teachers of Mathematics (NCTM) Standards.

Prerequisites:.................. MATH-121 and ENG-131, both with a C or better

MATH-225: Mathematics for Elementary Teachers III `MS`

Credit Hours:...3.00

Contact Hours:...4.00

For students who are involved in a curriculum for elementary teachers. Topics include geometry, probability, and statistics. Utilizes Geometer's Sketchpad to develop geometry content and computer software to enhance the probability and statistics units. Addresses concept development, communication skills, both oral and written, and problem-solving skills in accordance with the National Council of Teachers of Mathematics (NCTM) standards.

Prerequisites:... MATH-221, C or better

MATH-275: Discrete Mathematics `MS`

Credit Hours:...4.00

Contact Hours:...4.00

For students in a computer engineering or computer science program. Covers logic, methods of proof, set theory, algorithms, recursion, correctness, relations, partial orderings, graphs, trees, Boolean algebra, grammars, and finite-state machines. Includes various applications throughout the course. Requires a graphing calculator, with the TI-83/84 Plus recommended.

Prerequisites:..MATH-180 with a C or better or concurrent enrollment in MATH-180

MATH-280: Calculus III `MS`

Credit Hours:...5.00

Contact Hours:...5.00

Covers topics such as the calculus of vector-valued functions, the differential calculus of functions of more than one variable, directional derivatives, gradients, partial derivatives, multiple integration, vector fields, and line integrals. Various applications are covered throughout the course. Utilizes numerical, graphical, and algebraic approaches whenever possible. Requires a graphing calculator, with the TI-83/84 Plus recommended, and access to an online homework management system.

Prerequisites:...MATH 183 with a C or better

MATH-283: Linear Algebra `MS`

Credit Hours:...3.00

Contact Hours:...3.00

Introduces matrix and linear algebra. Covers systems of linear equations, matrix operations and properties of matrices, determinants, the n-dimensional real vector space, general vector spaces, inner product spaces, linear transformations, and eigenvalues and eigenvectors. Presents various applications. Requires a graphing calculator with the TI-83/84 Plus recommended.

Prerequisites:...MATH 183 with a C or better

MATH-289: Differential Equations `MS`

Credit Hours:...4.00

Contact Hours:...4.00

Introduces ordinary differential equations by means of numerical, graphical and algebraic analysis. Examines first order differential equations, second and higher order linear equations, methods for nonhomogeneous second order equations, series solutions, systems of first order equations, and Laplace transforms. Covers various applications throughout the course. Requires a graphing calculator with the TI-83/84 Plus recommended.

Prerequisites:.. MATH-280 with a C or better OR concurrent enrollment in MATH-280

MFMT-101: Energy Technology Applications `IT` `C`

Credit Hours:...2.00

Contact Hours:...2.00

Introduces energy conversion, the study of energy sources, basic energy conversion concepts, applied mechanics, and measurement of their basic quantities. Emphasizes how to identify and use basic methods for measuring, monitoring, and calculating energy as applied to energy conversion, conservation, and use in various simple machines and power systems.

Prerequisites:.. None

MFMT-114: Energy Conversion Principles, Tools, Instruments, and Processes `IT` `C`

Credit Hours:...2.00

Contact Hours:...2.00

Presents applied facilities and power plant fundamentals designed to provide introductory practical science studies for students entering the power, facilities, HVAC, and process operation and maintenance fields. Covers tools, instruments, materials and practical science including basic thermodynamics, plant visits, operation and maintenance fundamentals with exercises and experiences that meet or exceed requirements of National Skill Standards for heat, power, HVAC, and facilities technicians and engineers.

Prerequisites:.. None

Courses

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
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MFMT-115: Boiler Low Pressure Heating Plant Operation and Maintenance   IT C

Credit Hours:..2.00

Contact Hours:..2.00

An introductory-level course in boiler (low pressure) heating plant operation and maintenance covering the skills, knowledge, and competencies for persons employed as building engineers or seeking positions as building and plant multi-skilled facilities technicians. May require plant visits. Computer access is mandatory, and student must be literate with web browsers, word processing, spread sheets, e-mail, and other computer-online activities. NOTE: This course does not qualify a person to take a license exam. However, when taken in a certificate program or in combination with other power engineering courses, this course can be used to meet requirements for certificates which may result in meeting the qualification requirements for taking exams leading to a boiler license.

MFMT-116: High Pressure Boiler-3rd Class License Preparation   IT C

Credit Hours:..2.00

Contact Hours:..2.00

Covers advanced skills, knowledge, and competencies necessary for individuals employed as boiler operators, plant engineers, or those interested in a career within a high pressure boiler, power, or process plant operation or maintenance. May require plant visits/tours.

Prerequisites:.. None

MFMT-151: Power Engineering Stationary Steam Core Skills   IT C

Credit Hours:..5.00

Contact Hours:..5.00

Prepares a student to function effectively as an entry-level Stationary Steam Engineer or in the capacity as introductory power plant personnel. Provides basic skills, knowledge, and familiarization with power, process, and heating-cooling plants through the study of basic principles and how they apply to the various types of equipment and systems found in such plants. Emphasizes the need for a hands-on approach where possible in a workplace laboratory setting and this is provided in the cogeneration lab with appropriate activities. Covers general workplace and personal safety along with hazardous or environmental concerns. Mandatory field trips and plant visits.

Prerequisites:.. None

MFMT-192: Power Facilities Practicum   IT C

Credit Hours:..2.00

Contact Hours:..2.00

Provides various forms of field experience as required by licensing agencies. Participants are assigned to an industrial plant or field-type situation in order to observe and be exposed to the actual activities and tasks performed by power engineers. Course may be repeated in order increase field experience and/or qualify for a licensure exam.

Prerequisites:.. Instructor permission - based upon courses/programs completed

MFMT-196: Power Engineering Independent Study   IT C

Credit Hours:..2.00

Contact Hours:..2.00

Provides field experience based on the availability of equipment systems and field-oriented workstations as selected or determined by the instructor. Course may be repeated when different topics are available. Course may be used towards fulfilling requirements for associate degree or certificate programs or to qualify to take license exams.

Prerequisites:................................... Permission from instructor based upon courses/programs completed

MFMT-224: Automated Control Systems 1   IT C

Credit Hours:..2.00

Contact Hours:..2.00

Provides practical application of repair and maintenance skills to automated control systems. Includes various commercial-industrial plant heating, power, process, building and facilities equipment and systems. Covers the fundamentals of instrumentation calibration, solid-state components, microprocessors, logic circuits, and programmable logic controllers (PLC) areas. Learners must be prepared to access simulation, computer interface, and similar materials online for completion of this course. Plant visits may be required.

Prerequisites:...Instructor permission

MFMT-241: Power Engineering/Refrigeration License Review   IT C

Credit Hours:..5.00

Contact Hours:..5.00

Advanced-level course providing refrigeration system operators, refrigeration journeymen, refrigeration service, and maintenance technicians with a comprehensive review in preparation to take a 1st, 2nd, or 3rd Class Refrigeration Operator License exam, the Refrigeration Journeyman License exam, similar related exams or to prepare for commercial or industrial refrigeration operation and maintenance positions. Covers the fundamentals of refrigeration, identification, and functions of various refrigeration systems and equipment with special commercial and industrial refrigeration systems covered on the license exams. Access to computers is critical for the mandatory computer-aided field research which requires visits to current refrigeration industry web sites. Students must be computer literate with web browsers, word processing, spreadsheets, e-mail, and other computer-online activities. Laboratory activities. May require field trips. NOTE: License exams are not included in this course.

Prerequisites:...................................Advanced refrigeration field experience or Instructor permission

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Courses

MFMT-248: Power Engineering - Steam License Review `IT` `C`

Credit Hours:..5.00

Contact Hours:...5.00

An advanced-level course for engineers seeking 1st or 2nd Class Steam License. Course reviews various power engineering subjects including boilers, basic thermodynamics, boiler operation, maintenance, plant efficiency, pumps, auxiliaries, power plant accessories, turbines, engines, electrical, compressors, internal combustion engines, and national, state and local steam and boiler codes. Explores how to solve typical power plant problems. Also offers information on how to study, sketch, analyze, and describe the function of systems and components on commercial-industrial power and process plant equipment and systems. NOTE: License exams are not included in this course.

Prerequisites:...Instructor permission

MGT-230: Principles of Management `BCT` `C`

Credit Hours:..3.00

Contact Hours:...3.00

Examines the functions, principles, history, environments, and philosophy of modern management as well as the nature and structure of organizations. Emphasizes recent developments in organizational decision making, styles of managerial leadership, and the role of effective communication in management. Also explores motivating, managing, recruiting, and terminating employees.

Prerequisites:..ENG-131 Eligible

MGT-231: Supervision and Teambuilding `BCT`

Credit Hours:..3.00

Contact Hours:...3.00

Explores how to develop and improve supervisory skills. Covers effective leadership techniques, how to identify and evaluate various leadership styles, and development of teambuilding skills.

Prerequisites:..None

MGT-232: Human Resources Management `BCT`

Credit Hours:..3.00

Contact Hours:...3.00

Examines the functions of staffing, recruiting, selecting, placing, orienting, training, developing, motivating, evaluating, compensating, and terminating employees. Covers employee security and morale, the legal environment, unions and labor relations, and effective communication of organizational policies. Also explores how to prepare a job analysis and evaluate resumes.

Prerequisites:..ENG-131 Eligible

MGT-237: Psychology in the Workplace `BCT`

Credit Hours:..3.00

Contact Hours:...3.00

Introduces psychological theory, research, and practice in the business environment. Examines selection criteria and predictors, training and development, performance appraisal, employee motivation and satisfaction, and occupational health. Analyzes and evaluates effective teamwork strategies, leadership theories, and union-management relationships.

Prerequisites:....ENG-131 Eligible and MGT-230 with a C grade or better

MGT-238: Labor-Management Relations `BCT`

Credit Hours:..3.00

Contact Hours:...3.00

Examines the principles underlying the labor-management relationship; analyzes the legal and institutional framework in which collective bargaining takes place; and probes the nature, content, and problems of the collective bargaining process. Analyzes and evaluates employee benefit plans as well as the principles and techniques of collective bargaining.

Prerequisites:....ENG-131 Eligible and MGT-230 with a C grade or better

MGT-241: Small Business Management and Entrepreneurship `BCT`

Credit Hours:..3.00

Contact Hours:...3.00

Examines the role of small business and entrepreneurship in the current economy with emphasis on launching and operating a new business. Also explores the purpose of and need for a business plan, and other important aspects such as financial needs, marketing plans, personnel and operational management, legal issues, and location. Includes the individual creation of a business plan for a start-up company.

Prerequisites:..ENG-131 Eligible

MII-101: Medical Imaging Informatics Basics `HS`

Credit Hours:..3.00

Contact Hours:...3.00

Provides an overview of computer and network system basics needed in a medical imaging informatics role. Focuses on current medical imaging informatics system architecture, picture archiving and communications system (PACS) standards, and protocol.

Prerequisites:......Acceptance into Medical Imaging Informatics Program

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Courses

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MII-102: Evaluating the Clinical Image `HS`

Credit Hours:..3.00

Contact Hours:..3.00

Provides the clinical knowledge and medical background necessary for image evaluation purposes. Emphasizes quality control as well as patient safety. Also discusses the importance of having some clinical knowledge for Picture Archiving and Communications System (PACS) employment positions.

Prerequisites:.....Acceptance into Medical Imaging Informatics Program

MII-201: Picture Archiving and Communication system (PACS) Procurement and Project Management `HS`

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the process of procuring a picture archiving and communication system (PACS) for a healthcare organization. Focuses on needs assessment, vendor comparison, and project management. Lab activities.

Prerequisites:...MII 101, 102

MII-202: Medical Imaging Informatics Advanced `HS`

Credit Hours:..3.00

Contact Hours:..3.00

Examines advanced medical imaging informatics, technical troubleshooting, and system standards. Emphasizes the functional application and implementation of new equipment at it relates to compliance with the digital imaging and communications in medicine (DICOM) standards and in preparation for business continuity in the event of system failure.

Prerequisites:...MII 101, 102

MII-290: Clinical Externship `HS`

Credit Hours:..3.00

Contact Hours:.. 11.07

A supervised, clinical practicum which requires hands-on experience within a medical imaging setting. Provides directed practice under the supervision of a medical imaging informatics or picture archiving and communication system (PACS) professional. Emphasizes the need to integrate information from all previous courses within a live clinical setting. Lab activities.

Prerequisites:...Preapproved clinical placement, MII 101, MII 102, MII 201, MII 202

MOA-100: Medical Office Procedures I - Administrative `HS`

Credit Hours:..3.00

Contact Hours:..4.00

Introduces the profession of medical assisting. Emphasizes administrative skills utilized in ambulatory care. Discusses administrative and clinical duties of the Medical Assistant Practitioner. Also includes but is not limited to medical office receptionist duties, maintaining medical records, billing and fee collection, medical practice finance, computer applications, and emergency preparedness.

Prerequisites:.....................COMPASS Reading Score of 84+ or completion of ENG 081; COMPASS MATH Pre-Algebra Score of 39+ or MATH 074/0774 with a C or higher; AH 100 with a C or higher; Health Careers Typing Test score of 45+ words per min. or BCA 101 with a B or better

MOA-110: Processing Health Insurance Claims `HS`

Credit Hours:..2.00

Contact Hours:..3.00

An introductory-level insurance billing course centering on the medical office. Presents the coding systems used in conjunction with the ICD-9CM and the CPT manual. Also discusses how information is used to process health insurance claims for BCBS, Medicare, Medicaid, Tricare, Commercial, and Workers Compensation.

Prerequisites:.....................COMPASS Reading Score of 84+ or completion of ENG 081; COMPASS MATH Pre-Algebra Score of 39+ or MATH 074/0774 with a C or higher; AH 100 with a C or higher; Health Careers Typing Test score of 45+ words per min. or BCA 101 with a B or better

MOA-120: Medical Office Computer Applications `HS`

Credit Hours:..2.00

Contact Hours:..3.00

Introduces computer applications unique to the medical office. Covers establishing information databases files, computerized appointment scheduling, patient account information, accounts receivable, aging accounts, insurance billing, recall notice, and production reports. Significant laboratory activities.

Prerequisites:.....................COMPASS Reading Score of 84+ or completion of ENG 081; COMPASS MATH Pre-Algebra Score of 39+ or MATH 074/0774 with a C or higher; AH 100 with a C or higher; Health Careers Typing Test score of 45+ words per min. or BCA 101 with a B or better

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MOA-150: Medical Office Assistant Procedures II-Clinical `HS`

Credit Hours:..5.00

Contact Hours:..7.00

An advanced-level medical assistant course that explores the clinical functions of the medical practice. Presents topics such as vital signs, administration of medication, electrocardiography, assisting with minor surgery, examinations, and treatments. Students practice the concepts of medical and surgical asepsis, and routine diagnostic tests and procedures.

Prerequisites:.... MOA 100, MOA 110, MOA 120, HCS 124 and BIO 134 or BIO 233/BIO 234 - all with a "C" grade or better

MOA-160: Basic X-ray Techniques `HS`

Credit Hours:..2.00

Contact Hours:..2.00

For medical assistants and other health care professionals who will be practicing limited radiography. Covers radiation safety, non-contrast procedures, patient positioning, radiographic projections, and radiology mathematics. Students study and practice performing x-rays using phantom parts under direct supervision.

Prerequisites:.. AH 100 with a "C" grade or better; COMPASS Reading test score of 84 or higher or successful completion of ENG 081; COMPASS MATH Pre-algebra test score of 39 or higher or successful completion of MATH 074/0774 or MATH 100 or MATH 101.

MOA-165: Physician Billing Concepts `HS`

Credit Hours:..4.00

Contact Hours:..4.00

This course is designed to build upon the knowledge gained in MOA-100, and MOA-110   The process of electronic claims preparation is practiced through classroom simulations   The student will use medical office computer applications to establish patient, insurance, facility data bases. This information allows the user to prepare statements, bill insurance companies, post payments to the patient account, and generate statements and other financial documents utilized in the physician's office.

Prerequisites:..........................MOA 100, MOA 110 with a C grade or better.

MOA-168: Facility Billing Concepts `HS`

Credit Hours:..4.00

Contact Hours:..4.00

Focuses on the billing process unique to health care facilities. Examines the hospital billing environment, coding, payment methods, and UB92 claims along with billing simulations.

Prerequisites:.. AH 100, MOA 100 and MOA 110 with "C" grade or better

MOA-170: Medical Correspondence `HS`

Credit Hours:..3.00

Contact Hours:..4.00

Focuses on the variety of medical correspondence found in ambulatory health care facilities. Introduces the procedures used for initiating and documenting patient care using an electronic health record system. Also covers medical office workflow, practice finance, medical billing and coding, clinical procedures, and administrative functions of the front office. Laboratory activities.

Prerequisites:....................................MOA 100, MOA 110, MOA 120, HCS 124 and BIO 134 or BIO 233/234 - all with a "C" grade or better.

MOA-181: Medical Collection and Legal Issues `HS`

Credit Hours:..3.00

Contact Hours:..3.00

An advanced physician billing course focusing upon payment posting, fee schedules, HMO capitation reports, rejections, billable/non-billable services, claim status, and collections. Also discusses ethics in relation to billing and billing issues.

Prerequisites:.......................................MOA 165 and MOA 168 - both with a "C" grade or better

MOA-190: Medical Office Externship `HS`

Credit Hours:..4.00

Contact Hours:.. 13.73

Offers a capstone clinical externship for the medical assistant student, including 184 hours of clinical experience in an assigned ambulatory care facility. Includes a structured seminar component.

Prerequisites:......... MOA 150, MOA 170, PSY 131 and BIO 134 or BIO 233 & 234 with a C or better and permission of Program Director

MOA-205: Insurance Coding and Reimbursement `HS`

Credit Hours:..3.00

Contact Hours:..3.00

Further develops the methods and skills necessary for optimal reimbursement for services rendered in a healthcare setting. Explores billing and reimbursement cycle, HIPAA, diagnostic coding and procedural coding, coding compliance, and claims processing as well as physician and hospital coding reimbursement. Also provides an overview of the key financial circumstances impacting the healthcare delivery system.

Prerequisites:......................MOA 165, 168 - both with a "C" grade or better

Courses

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MTT-100: Machine Tool Processes I   IT C

Credit Hours:..4.00

Contact Hours:..6.00

An entry-level course in manufacturing processes involving turning, threading, drilling, reaming, tapping, and milling. Covers part processing, machines, and tooling used along with speeds and feeds and inspection techniques in relation to operations. Safety is an integral part of the course. Laboratory activities.

MTT-105: Print Reading for Manufacturing   IT C

Credit Hours:..3.00

Contact Hours:..3.00

Surveys the fundamentals of print reading and focuses on concepts and techniques used in various segments of the manufacturing industry. Covers print reading components, such as title blocks, parts lists, geometric terms, and construction. Topics include how to read multi-view drawings, which include section views and auxiliary views, and how to develop strategies for recognizing part shape and size through multiple styles of industrial drawings. Also emphasizes an understanding of part process completion, industrial materials, fasteners, cams, gears, numerical control, and surface finish.

MTT-110: Machine Tool Processes II   IT C

Credit Hours:..4.00

Contact Hours:..6.00

A hands-on course offering advanced manufacturing processes experience on the lathe, mills, and grinders. Emphasizes the proper usage and safety protocols of equipment and tools used in performing machining operations. Also covers the efficient use and the troubleshooting of carbide, ceramic, and diamond-cutting tool materials.

Prerequisites:..MTT 100

MTT-120: Practical Problems in Machine Tools I   IT C

Credit Hours:..3.00

Contact Hours:..4.00

Explores how to increase machining efficiency and quality of workmanship. Individualized instruction helps the student overcome deficiencies in machining on the lathe and vertical milling machine. Emphasizes tool sharpening, set-up, and safety protocols.

Prerequisites:..MTT 110

MTT-125: Practical Problems in Machine Tools II   IT C

Credit Hours:..3.00

Contact Hours:..4.00

Demonstrates how to further develop the student's machining efficiency. Individualized instruction helps the student overcome any deficiencies in machining on the lathe, mill, or grinders. Material, tolerance, finish, and design are considered in emphasizing quality and quantity of parts within a time limit. Emphasizes proper safety protocols and work habits.

Prerequisites:..MTT 120

MTT-130: Quality Control Gaging and Inspection   IT C

Credit Hours:..3.00

Contact Hours:..4.00

An entry-level course covering the following manufacturing inspection methods: layout, surface plate techniques, tool and instrument reading and uses, and floor and receiving inspection. Also discusses surface finish measurement, introduction to SPC techniques, and GDT. Laboratory activities.

MTT-140: Introduction to CNC   IT C

Credit Hours:..3.00

Contact Hours:..4.00

An entry-level course covering the basic concepts of computer numerical control (CNC). Also explores set-up, operation, and programming of a CNC mill and CNC lathe. Laboratory activities.

Prerequisites:..MTT 100

MTT-145: CNC Operations   IT C

Credit Hours:..4.00

Contact Hours:..6.00

Introduces the concept of computer numerical control (CNC) operations as they exist in the manufacturing environment. Examines setup, operation, and programming of the CNC mill and lathe through MDI and off-line programming. Extensive laboratory activities.

Prerequisites:..MTT 140

MTT-146: Introduction to Machine Tool Probing   IT C

Credit Hours:..1.00

Contact Hours:..0.93

Covers the elementary functions and application of the electronic probe on a Vertical Machining Center. Topics include set-up and calibration of the probe and use and application of the following cycles - Bore/Boss measuring cycle, Web/Pocket measuring cycle, and internal and external cycles. Laboratory activities.

Prerequisites:..MTT 145

MTT-147: Basic Macro Programming for CNC   IT C

Credit Hours:..1.00

Contact Hours:..1.47

Introduces macro programming as applied to CNC machine tools. Basic elements of this type of programming include defining a macro, defined variables vs. undefined variables, and the use and application of arithmetic, logical and Boolean operators. Includes both classroom and application-based activities in the CNC laboratory.

Prerequisites:..MTT 145

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MTT-148: Advanced CNC Probing `IT` `C`

Credit Hours:..1.00

Contact Hours:..0.93

Coursework further explores the use and application of the electronic probe on CNC machine tools. Examines how to write cycles to use the probe in such activities as vector measuring, 4th axis applications, stock allowance, and angle measurement along with work coordinate offset measurement. Also covers how to prove work on the CNC vertical machining center. Laboratory activities.

Prerequisites:...MTT 145, MTT 146, MTT 147

MTT-150: Statistical Process Control (SPC) In Manufacturing `IT` `C`

Credit Hours:..3.00

Contact Hours:..4.00

Covers the use of Statistical Process Control (SPC) in manufacturing to achieve optimum product quality at lowest cost. Development of statistical charts and their interpretation related to process improvement are integral parts of the course. Also covers formulas pertaining to various charts, gage R & R, Cp, and Cpk.

MTT-160: Computer Assisted N/C Programming `IT` `C`

Credit Hours:..3.00

Contact Hours:..4.00

An introductory-level course in computer-assisted part programming. Covers programming for both the CNC mill and lathe. Coursework utilizes CAD/CAM software (Mastercam, Catia, and UG NX) running on a personal computer.

Prerequisites:...MTT 140

MTT-170: Advanced Computer Assisted N/C Programming `IT` `C`

Credit Hours:..3.00

Contact Hours:..4.00

A study in advanced methods of part programming using CAD/CAM software (Mastercam, Catia, and UG NX) on a personal computer. Emphasizes programming three-dimensional (3-D) parts. Class assignments include multiple-part programming.

Prerequisites:...MTT 160

MTT-275: Advanced CNC Operations `IT`

Credit Hours:..4.00

Contact Hours:..6.00

Emphasizes the total aspects of computer numerical control (CNC) as applied in manufacturing today. Covers estimating for CNC manufacturing, DNC, tool selection, cutting-tool material selection, and small-batch production.

Prerequisites:...MTT 145

MTT-297: Special Topics in Machine Tool Technology `IT` `C`

Credit Hours:..1.00

Contact Hours:..0.93

Explores selected topics as determined by the academic department and the instructor with emphasis on current machine tool technology. Specific special topics are announced together with the prerequisites each term. Student can repeat the course when different topics are offered, earning credit for each different topic. Course may be used toward fulfilling the specific degree requirements for an associate degree or certificate.

Prerequisites:...MTT 145

MTT-298: Special Topics in Machine Tool Technology `IT` `C`

Credit Hours:..2.00

Contact Hours:..2.00

Explores selected topics as determined by the academic department and the instructor with emphasis on current Machine Tool Technology. Specific special topics are be announced together with the prerequisites each term. Student can repeat the course when different topics are offered, earning credit for each different topic. Course may be used toward fulfilling the specific degree requirements for an associate degree or certificate.

Prerequisites:...MTT 145

MUS-107: Chorus 1 `SSAF` `C`

Credit Hours:..1.00

Contact Hours:..3.00

First of four semesters of Concert Choir including preparation and performance of a broad spectrum of choral music from classical to popular, show tunes, and jazz. At least two performances are scheduled each semester, sometimes accompanied by band or orchestra. These courses are open to college students and adult members of the community. New singers may audition before or during the first week of class. No preparation is necessary, but the demonstration of the ability to sing in tune and hold a part (soprano, alto, tenor, or bass) is required.

Prerequisites:...Audition

MUS-108: Chorus 2 `SSAF` `C`

Credit Hours:..1.00

Contact Hours:..3.00

Second of four semesters of Concert Choir including preparation and performance of a broad spectrum of choral music from classical to popular, show tunes, and jazz. At least two performances are scheduled each semester, sometimes accompanied by band or orchestra. These courses are open to college students and adult members of the community.

Prerequisites:...MUS 107

Courses

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MUS-109: Symphony Band 1 SSAF C

Credit Hours:...1.00

Contact Hours:..3.00

First of four semesters of wind ensemble (symphony band) including preparation and performance of standard concert band music and transcriptions of all styles. This group performs for college as well as community functions. These courses are open to college students, adult members of the community, and advanced placement high school students. Woodwind, brass, and percussion instrumentalists should contact the director for auditions prior to the first rehearsal.

Prerequisites:...Read Music

MUS-110: Symphony Band 2 SSAF C

Credit Hours:...1.00

Contact Hours:..3.00

Second of four semesters of wind ensemble (symphony band) including preparation and performance of standard concert band music and transcriptions of all styles. This group performs for college as well as community functions. These courses are open to college students, adult members of the community, and advanced placement high school students who play woodwind, brass, and percussion instruments.

Prerequisites:...MUS 109

MUS-111: Jazz Band 1 SSAF C

Credit Hours:...1.00

Contact Hours:..3.00

First of four semesters of jazz band, including preparation and performance of Big Band music in a variety of jazz styles from swing to contemporary. This group, which performs several concerts each semester, is open to college students and adult members of the community who play saxophone, trumpet, trombone, piano, guitar, bass, or drums. New instrumentalists should contact the director to arrange for an audition prior to the first rehearsal.

Prerequisites:...Read Music

MUS-112: Jazz Band 2 SSAF C

Credit Hours:...1.00

Contact Hours:..3.00

Second of four semesters of jazz band, including preparation and performance of Big Band music in a variety of jazz styles from swing to contemporary. This group, which performs several concerts each semester, is open to college students and adult members of the community who play saxophone, trumpet, trombone, piano, guitar, bass, or drums.

Prerequisites:...MUS 111

MUS-113: Applied Music (one credit) 1 SSAF C

Credit Hours:...1.00

Contact Hours:..0.93

First of four semesters of weekly half-hour private lessons intended to improve vocal or instrumental musicianship through study with a professional teacher. Students should contact the applied music director prior to or during the first week of the semester for teacher assignments. A juried performance is required at the conclusion of each semester. In addition to tuition, the student must also pay a weekly fee to the private instructor.

Prerequisites:...None

MUS-114: Applied Music (two credits) 1 SSAF C

Credit Hours:...2.00

Contact Hours:..2.00

First of four semesters of weekly one-hour private lessons intended to improve vocal or instrumental musicianship through study with a professional teacher. Students should contact the applied music director prior to or during the first week of the semester for teacher assignments. A juried performance is required at the conclusion of each semester. In addition to tuition, the student must also pay a weekly fee to the private instructor.

Prerequisites:...Instructor Permission

MUS-115: Applied Music (one credit) 2 SSAF C

Credit Hours:...1.00

Contact Hours:..0.93

Second of four semesters of weekly half-hour private lessons intended to improve vocal or instrumental musicianship through study with a professional teacher. Students should contact the applied music director prior to or during the first week of the semester for teacher assignments. A juried performance is required at the conclusion of each semester. In addition to tuition, the student must also pay a weekly fee to the private instructor.

Prerequisites:...MUS 113 (one credit)

MUS-116: Applied Music (two credits) 2 SSAF C

Credit Hours:...2.00

Contact Hours:..2.00

Second of four semesters of weekly one-hour private lessons intended to improve vocal or instrumental musicianship through study with a professional teacher. Students should contact the applied music director prior to or during the first week of the semester for teacher assignments. A juried performance is required at the conclusion of each semester. In addition to tuition, the student must also pay a weekly fee to the private instructor.

Prerequisites:....................................MUS 114 Applied Music (two credits) 1

BCT — Business and Computer Technology Division
C — Credit for Prior College-level Learning
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MS — Math and Science Division
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Courses

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MUS-117: Piano Class 1 — SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

A beginning-level piano class where students learn to read and play piano music. Instruction takes place in the HFC Music Technology Lab.

Prerequisites:.. None

MUS-118: Piano Class 2 — SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

This course builds upon skills developed in MUS 117 (Piano Class 1). Instruction takes place in the HFC Music Technology Lab.

Prerequisites:...............................MUS 117 or Instructor permission

MUS-121: Jazz Improvisation 1 — SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

First of four semesters of jazz improvisation in which skills are developed through the study of jazz theory and the performances of a variety of jazz styles in a small group, jazz combo setting.

Prerequisites:..Read Music

MUS-122: Jazz Improvisation 2 — SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Second of four semesters of jazz improvisation in which skills are developed through the study of jazz theory and the performances of a variety of jazz styles in a small group, jazz combo setting.

Prerequisites:... MUS 121

MUS-123: Voice Techniques 1 — SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

This course is for singers of all ages and interests. Covers basic singing techniques including breath control, diction, posture, and tone quality; instruction takes place in a classroom setting. Techniques are applied to a variety of songs.

Prerequisites:.. None

MUS-126: Recording Studio Engineering 1 — SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Provides hands-on experience in digital audio engineering. Explores how to engineer recording sessions by working in an actual recording studio with live musicians. Also covers basic techniques in setting up recording sessions, preparing computer files, microphone usage and placement, digitizing principals, audio acquisition options, midi integration and session management.

Prerequisites:...ENG 131 eligible

MUS-127: Audio Mastering 1 — SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Provides hands-on experience and guided practice in digital audio mixing and mastering. Explains how to prepare complex digital audio files for duplication and audio for mixing. Also covers basic techniques in mixing room acoustics, software plug-ins, how to troubleshoot various audio problems, equalization, stereo imagery, noise limitation, and bit conversion. Uses professional audio production software.

Prerequisites:...ENG 131 eligible

MUS-128: Musical Production 1 — SSAF C

Credit Hours:..3.00

Contact Hours:..6.13

Combines the study of musical skills and techniques involved in a staged musical production with performance activity in a major production and/or the classroom.

Prerequisites:...Audition

MUS-130: Music Appreciation — SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the basic elements and organizational forms of music, and emphasizes listening skills, music vocabulary, and being open-minded toward all types of music.

Prerequisites:.. None

MUS-132: Music Literature — SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Surveys various musical compositions from the Medieval period through the Twentieth Century, emphasizing the development of listening skills. Provides more in-depth knowledge than MUS 130.

Prerequisites:.. None

MUS-133: History of Rock and Roll   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Covers rock and roll from its origins to the present. A field trip to the Rock and Roll Hall of Fame in Cleveland, Ohio is offered. For non-music majors.

Prerequisites:.. None

MUS-134: Music Fundamentals   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Explains how to read music, including notes, clefs, rhythms, time signatures, scales, intervals, and basic chords. Recommended for the student who has a minimal background in music.

Prerequisites:.. None

MUS-138: Music Theory 1   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

The first class in the music theory sequence. Requires the ability to read music and have a basic understanding of key signatures and time signatures. Covers tonality, intervals, triads, and basic voicings. Recommended to be taken in conjunction with MUS 141: Aural Music Skills 1.

Prerequisites:..Read Music

MUS-139: Music Theory 2   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Covers triads in inversion, phrase and cadences, harmonic progressions, and four-part harmonization including voice leading. Recommended to be taken in conjunction with MUS 142, Aural Music Skills 2.

Prerequisites:...MUS 138

MUS-141: Aural Music Skills 1   SSAF C

Credit Hours:..2.00

Contact Hours:...2.00

Introduces the singing and transcribing of simple melodies, as well as fundamental conducting techniques for the development of rhythmic skills. Recommended for all instrumental and vocal musicians. Strongly recommended to be taken in conjunction with MUS 138, Music Theory 1.

Prerequisites:..Read Music

MUS-142: Aural Music Skills 2   SSAF

Credit Hours:..2.00

Contact Hours:...2.00

Develops sight singing and ear training skills introduced in MUS 141. Focuses on how to transcribe two-part and four-part pieces in major and minor keys. Recommended for aspiring full-time music students. Strongly recommended to be taken in conjunction with MUS 139, Music Theory 2.

Prerequisites:...MUS 141

MUS-143: Vocal Jazz Ensemble 1   SSAF C

Credit Hours:..1.00

Contact Hours:...3.00

First of four sequential semesters of vocal jazz ensemble, covering preparation and performance of a variety of jazz and popular music in an ensemble of 8-20 voices. This group performs for the College as well as community functions. Auditions are held before and during the first week of class.

Prerequisites:...Audition

MUS-144: Vocal Jazz Ensemble 2   SSAF C

Credit Hours:..1.00

Contact Hours:...3.00

Second of four sequential semesters of vocal jazz ensemble, covering preparation and performance of a variety of jazz and popular music in an ensemble of 8-20 voices. Group performs for various HFC and community functions.

Prerequisites:...MUS 143

MUS-152: Music Notation with Finale 1   SSAF C

Credit Hours:..2.00

Contact Hours:...2.00

Provides instruction in the use of "Finale" by Coda which is the current industry standard for music software. Covers basic document setup, how to use templates, tool palettes, importing and saving files, and file playback. To register for this course, students must have a basic knowledge of how to use a computer and file playback.

Prerequisites:..Read Music

MUS-207: Chorus 3   SSAF C

Credit Hours:..1.00

Contact Hours:...3.00

Third of four semesters of Concert Choir including preparation and performance of a broad spectrum of choral music from classical to popular, show tunes, and jazz. At least two performances are scheduled each semester, sometimes accompanied by band or orchestra. These courses are open to college students and adult members of the community.

Prerequisites:...MUS 108

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Courses

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MUS-208: Chorus 4   SSAF C

Credit Hours:..1.00

Contact Hours:..3.00

Fourth of four semesters of Concert Choir including preparation and performance of a broad spectrum of choral music from classical to popular, show tunes, and jazz. At least two performances are scheduled each semester, sometimes accompanied by band or orchestra.

Prerequisites:...MUS 207

MUS-209: Symphony Band 3   SSAF C

Credit Hours:..1.00

Contact Hours:..3.00

Third of four semesters of wind ensemble (symphony band) including preparation and performance of standard concert band music and transcriptions of all styles. This group performs for college as well as community functions. These courses are open to college students, adult members of the community, and advanced placement high school students who play woodwind, brass, and percussion instruments.

Prerequisites:...MUS 110

MUS-210: Symphony Band 4   SSAF C

Credit Hours:..1.00

Contact Hours:..3.00

Fourth of four semesters of wind ensemble (symphony band) including preparation and performance of standard concert band music and transcriptions of all styles. This group performs for college as well as community functions. These courses are open to college students, adult members of the community, and advanced placement high school students who play woodwind, brass, and percussion instruments.

Prerequisites:...MUS 209

MUS-211: Jazz Band 3   SSAF C

Credit Hours:..1.00

Contact Hours:..3.00

Third of four semesters of jazz band, including preparation and performance of Big Band music in a variety of jazz styles from swing to contemporary. This group, which performs several concerts each semester, is open to college students and adult members of the community who play saxophone, trumpet, trombone, piano, guitar, bass, or drums.

Prerequisites:...MUS 112

MUS-212: Jazz Band 4   SSAF C

Credit Hours:..1.00

Contact Hours:..3.00

Fourth of four semesters of jazz band, including preparation and performance of Big Band music in a variety of jazz styles from swing to contemporary. This group, which performs several concerts each semester, is open to college students and adult members of the community who play saxophone, trumpet, trombone, piano, guitar, bass, or drums.

Prerequisites:...MUS 211

MUS-213: Applied Music (one credit) 3   SSAF C

Credit Hours:..1.00

Contact Hours:..0.93

Third of four semesters of weekly half-hour private lessons intended to improve vocal or instrumental musicianship through study with a professional teacher. Students should contact the applied music director prior to or during the first week of the semester to confirm teacher assignments. A juried performance is required at the conclusion of each semester. In addition to tuition, the student must also pay a weekly fee to the private instructor.

Prerequisites:...MUS 115

MUS-214: Applied Music (two credits) 3   SSAF C

Credit Hours:..2.00

Contact Hours:..2.00

Third of four semesters of weekly one-hour private lessons intended to improve vocal or instrumental musicianship through study with a professional teacher. Students should contact the applied music director prior to or during the first week of the semester for teacher assignments. A juried performance is required at the conclusion of each semester. In addition to tuition, the student must also pay a weekly fee to the private instructor.

Prerequisites:...Follow course sequence

MUS-215: Applied Music (one credit) 4   SSAF C

Credit Hours:..1.00

Contact Hours:..0.93

Fourth of four semesters of weekly half-hour private lessons intended to improve vocal or instrumental musicianship through study with a professional teacher. Students should contact the applied music director prior to or during the first week of the semester to confirm teacher assignments. A juried performance is required at the conclusion of each semester. In addition to tuition, the student must also pay a weekly fee to the private instructor.

Prerequisites:.......................................MUS 213 Applied Music (one credit) 3

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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MUS-216: Applied Music (two credits) 4 `SSAF`

Credit Hours:..2.00

Contact Hours:..2.00

Fourth of four semesters of weekly one-hour private lessons intended to improve vocal or instrumental musicianship through study with a professional teacher. Students should contact the applied music director prior to or during the first week of the semester for teacher assignments. A juried performance is required at the conclusion of each semester. In addition to tuition, the student must also pay a weekly fee to the private instructor.

Prerequisites:..................................... MUS 214 Applied Music (two credits) 3

MUS-221: Jazz Improvisation 3 `SSAF` `C`

Credit Hours:..2.00

Contact Hours:..2.00

A continuation of the study of jazz theory and the performances of a variety of jazz styles in a small group, jazz combo setting.

Prerequisites:.. MUS 122

MUS-222: Jazz Improvisation 4 `SSAF` `C`

Credit Hours:..2.00

Contact Hours:..2.00

Fourth of four semesters of jazz improvisation in which skills are developed through the study of jazz theory and the performances of a variety of jazz styles in a small group, jazz combo setting.

Prerequisites:.. MUS 221

MUS-226: Recording Studio Engineering 2 `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

Emphasizes advanced digital recording techniques and independent problem solving in the recording process. Covers recording sessions, computer files, microphone usage and placement, digitizing principals, audio acquisition options, midi integration, and session management. Students work in an actual digital recording studio recording a wide variety of instrumental and vocal ensembles.

Prerequisites:...MUS 126 or Instructor permission

MUS-227: Audio Mastering 2 `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

Provides hands-on experience and guided practice in advanced digital audio mixing and mastering. Course covers preparing complex digital audio files for duplication, advanced techniques in mixing room acoustics, preparing audio for mixing, software plug-ins, troubleshooting audio problems, equalization, stereo imagery, noise limitation, and bit conversion. Working with professional audio production software

in a working digital recording studio, students learn to edit sound files for a variety of applications including CDs, DVDs, TV, radio, theater, and the Internet.

Prerequisites:.. MUS 127

MUS-228: Musical Production 2 `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..6.13

Combines the study of musical skills and techniques involved in a staged musical production with performance activity in a major production and/or the classroom.

Prerequisites:.. MUS 128

MUS-229: Advanced Studies in Audio Recording `SSAF`

Credit Hours:..2.00

Contact Hours:..2.00

As the capstone for the Recording Arts Certificate program, course provides special study in audio recording and is intended for students completing the Certificate program. Students choose the topic for study and design an instructional plan under the guidance and approval of instructor. Must complete a major project that demonstrates skills and knowledge learned in the program, and project is presented at the end of the semester.

Prerequisites:...Instructor permission

MUS-232: History of Western Music 1 `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

An intensive course providing a practical background in Western music from Greek Antiquity to 1750. Covers musical forms, styles, composers, compositions, and important influences on the development of Western music.

Prerequisites:.. None

MUS-233: History of Western Music 2 `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

An intensive course providing a practical background in Western music from 1750 to the present. Covers musical forms, styles, composers, compositions, and important influences on the development of Western music.

Prerequisites:.. None

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Courses

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MUS-238: Music Theory 3   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Covers secondary dominants and borrowed chords, the use of the Neapolitan sixth, advanced modulation techniques, and how to identify non-chord tones.

Prerequisites:..MUS 139

MUS-243: Vocal Jazz Ensemble 3   SSAF C

Credit Hours:..1.00

Contact Hours:..3.00

Third of four sequential semesters of vocal jazz esemble, covering preparation and performance of a variety of jazz and popular music in an ensemble of 8-20 voices. Group performs for various HFC and community functions.

Prerequisites:..MUS 144

MUS-244: Vocal Jazz Ensemble 4   SSAF C

Credit Hours:..1.00

Contact Hours:..3.00

Fourth of four sequential semesters of vocal jazz ensemble, covering preparation and performance of a variety of jazz and popular music in an ensemble of 8-20 voices. Group performs for various HFC and community functions.

Prerequisites:..MUS 243

NCS-110: Competency Evaluated Nurse Assistant   HS

Credit Hours:..6.00

Contact Hours:..7.87

This five-week course covers the basic nursing skills necessary to work as a nurse aide. Discusses how nurse aides assist nurses in rendering patient care either as primary caregivers for residents living in long term or in acute and chronic settings. Total student course contact hours: 40 theory hours, 50 lab hours, 30 clinical hours.

NOTE: Upon successful completion of the course, students are eligible to take the State of Michigan Nurse Aide Competency exam for certification to receive the Certified Nursing Assistant (CNA) designation. This exam is not included in this course.

Prerequisites:.............High school diploma/GED; Score of 82 or above on the Compass test. Satisfactory completion of ENG 081 OR a C grade or better in ENG 131 OR equivalent.

NSG-082: Supplement to Nursing and Self-Care II (NSG 150)   HS

Credit Hours:..0.50

Contact Hours:..0.40

Emphasizes critical thinking to facilitate application of psychiatric nursing theory to clinical practice. NOTE: Students who register for NSG 082 must also register for NSG 150 at the same time. Both are 8-week courses. One hour of lecture per week.

NSG-083: Supplement to Nursing and Self–Care II and III   HS

Credit Hours:..1.00

Contact Hours:..0.93

Emphasizes the use of critical thinking to facilitate application of psychiatric and medical-surgical nursing theory to clinical practice. NOTE: Students who register for NSG 083 must also register for NSG 150 and NSG 155 at the same time. Both are 8-week courses. One to one-and-a half hour of lecture per week.

NSG-084: Supplement to Nursing and Self-Care III (NSG 155)   HS

Credit Hours:..0.50

Contact Hours:..0.40

Emphasizes the use of critical thinking to enhance understanding of beginning medical-surgical nursing theory to clinical practice. NOTE: Students who register for NSG 084 must also register for NSG 155 at the same time. Both are 8-week courses. One hour of lecture per week.

NSG-085: Supplement to Nursing and Self-Care IV   HS

Credit Hours:..1.00

Contact Hours:..0.93

Emphasizes the use of critical thinking to facilitate application of medical-surgical nursing theory to clinical practice. NOTE: Students who register for NSG 085 must also register for NSG 221 and NSG 222 at the same time. Both are 8-week courses. One to one–and–a–half hours of lecture per week.

Prerequisites:..None

NSG-086: Supplement to Nursing and Self-Care IV - Part I (NSG 221)   HS

Credit Hours:..0.50

Contact Hours:..0.40

Emphasizes the use of critical thinking to enhance understanding of medical-surgical nursing theory to clinical practice. NOTE: Students who register for NSG 086 must also register for NSG 221 at the same time. Both are 8-week courses. One hour of contact per week.

Prerequisites:..None

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

NSG-088: Supplement to Nursing and Self-Care IV - Part II (NSG 222) **HS**

Credit Hours:..0.50

Contact Hours:...0.40

Emphasizes the use of critical thinking to enhance understanding of medical-surgical nursing theory to clinical practice. NOTE: Students who register for NSG 088 must also register for NSG 222 at he same time. Both are 8-week courses. One hour of contact per week.

NSG-091: Nursing Systems II for Articulating L.P.N. Transition **HS**

Credit Hours:..1.00

Contact Hours:...0.93

Introduces concept-based curriculum as well as requires students to demonstrate competency in pharmacology, math competency for medication administration, physical appraisal, and application of the nursing process. NOTE: Required for students registered and admitted into the LPN-RN Advanced Program as it begins the process of assimilation into the second semester of the nursing program.

Prerequisites:...................................... BIO-233, BIO-234, ENG-131, HCS-131, PSY-131, MATH-1091, MATH-1092, MATH-1093, AND MATH-1094 OR MATH-110 OR MATH-109 OR MATH-115 OR MATH-141 OR MATH-175 OR MATH-180

NSG-101: Beginning Health and Physical Assessment **HS** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Covers how to perform a health assessment on an adult patient. Final project requires the successful demonstration of a comprehensive head-to-toe physical assessment at the beginner level. Recommended for students entering the nursing program, re-admitting to the program, or supplementing beginning skills and knowledge of physical assessment.

Prerequisites:.....BIO-233, ENG-131, HCS-131, MATH-1094 or MATH-110, and PSY-131 with a minimum grade of C or instructor permission.

NSG-115: Pharmacology for Nursing Practice 1 **HS** **C**

Credit Hours:..2.00

Contact Hours:..2.00

Introduces basic pharmacology, dosage calculation, and legal and ethical nursing responsibilities with medication administration. Offers insight into clinical reasoning by utilizing the nursing process for safe medication administration. Studies drug classifications such as anti-infective, antibiotics, antiviral, antifungal, anti-inflammatory, immune modulators, vaccines, drugs affecting gastrointestinal motility, and parenteral agents. Also provides information about the action of medications on the pathophysiology of disease, clinical indication for use, common adverse effects, and general nursing implications for different medications, significant drug interactions, and learning needs patients have about their medications.

Prerequisites:.....BIO-233, ENG-131, HCS-131, MATH-1094 or MATH-110, and PSY-131 with a minimum grade of C or instructor permission.

NSG-117: Medical-Surgical Nursing 1 **HS** **C**

Credit Hours:..6.00

Contact Hours:... 10.00

Introduces the first semester nursing student to the role of the professional nurse as the provider of care for adult clients and a member of the profession. Explains how to utilize critical thinking skills in a systematic, problem solving process as a framework for providing care. Provides a framework for best practices, to think critically, assess factors that influence safe and effective care delivery, and integrate theory with care of clients. Also covers medical and surgical aseptic techniques, hygiene, body mechanics, range of motion, medication administration, urinary catheter insertion, nasogastric tube insertion and care, percutaneous tube care, tube feedings, intravenous medications administration, application of oxygen therapy, use of personal protective equipment, and wound care.

Prerequisites:.....BIO-233, ENG-131, HCS-131, MATH-1094 or MATH-110, and PSY-131 with a minimum grade of C or instructor permission.

NSG-118: Pharmacology for Nursing Practice II **HS**

Credit Hours:..1.00

Contact Hours:...0.93

Continues to explore the principles of safe medication administration, pharmacokinetics, and pharmacodynamics and basic pharmacology. Covers master dosage calculations for complex medication for adult clients. Drug classifications correlate with topics covered in NSG 119 and NSG 121.

Prerequisites:...NSG 101, NSG 115, and NSG 117 with a minimum grade of C

NSG-119: Medical-Surgical Nursing II **HS**

Credit Hours:..6.00

Contact Hours:... 10.00

Continues to explore how to utilize critical thinking skills in a systematic, problem solving process, as a framework for providing safe and effective care to restore and promote health in adult clients. Focuses on nursing care related to concepts of healthy adult clients as well as adult clients with common, acute, or chronic illness exemplars, and explains how to research best practices and integrate theory in the care of adult clients and families in a variety of clinical settings. Four hours of theory and six hours of clinical/lab per week.

Prerequisites:...NSG 101, NSG 115, and NSG 117 with a minimum grade of C

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NSG-120: Nursing and Health Care System I HS C

Credit Hours:...2.00

Contact Hours:..2.00

Examines how to socialize students into the nursing profession. Also introduces concepts necessary for functioning at optimal levels as a student nurse and as an entry-level registered nurse.

Prerequisites:...ENG 131, 132 and PSY 131

NSG-121: Psychiatric Mental Health Nursing HS

Credit Hours:...4.00

Contact Hours:..8.00

Introduces the second semester nursing student to the role of the nurse as a provider of care for clients with mental health disorders with emphasis on therapeutic communication techniques. Course presents the mental-health/mental-illness continuum as a framework for differentiating between healthy and unhealthy mental health be-haviors. Discusses how to utilizes critical thinking skills, in a systematic, problem solving process, to provide safe and effective care to clients in the psychiatric mental health setting. Two hours of lecture and six hours of lab/clinical per week.

Prerequisites:..NSG 101, NSG 115, and NSG 117 with a minimum grade of C

NSG-126: Nursing and Self-Care I HS C

Credit Hours:...7.00

Contact Hours:.. 13.00

Introduces the fundamental skills needed in entry-level nursing prac-tice. Covers the nursing process and Orem's Self-Care Model as the conceptual model for nursing practice. Laboratory practice precedes clinical experience with actual clients. Emphasizes the development of competence for the entry-level registered nurse in the clinical experience.

Prerequisites:...ENG 131, ENG 132, PSY 131

NSG-150: Nursing and Self-Care II HS C

Credit Hours:...5.00

Contact Hours:..9.00

Emphasizes therapeutic communication and therapeutic use of self. Presents how to apply principles from stress, systems, learning, change, and caring theories to adult psychiatric patients in both the inpatient and outpatient setting. Also explains legal and ethical stan-dards for entry-level nurse practice.

Prerequisites:..... AH 120; BIO 233; ENG 131, 132; PSY 131; NSG 120, 126.

NSG-155: Nursing and Self-Care III HS

Credit Hours:...5.00

Contact Hours:..9.00

Emphasizes principles, concepts, and factors related to the client's health state. Focuses on the principles of pain management, concepts of fluid-electrolyte and acid base balance, peri-operative care, man-agement of endocrine disorders, cancer, inflammation, and immunity. Integrates ethical principles of practice within the ADN role and standards of care.

Prerequisites:...... AH 120; BIO 233; ENG 131, 132; NSG 120, 126; PSY 131

NSG-185: Basic Pathophysiology for Nursing HS

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the subject of pathophysiology as it applies to nursing content. Provides a solid background for the more complex NSG 285 - Pathophysiology for Nurses.

Prerequisites:... BIO 233, BIO 234, or BIO 134 or transfer equivalent with a "C" grade or better. Students waiting to enter the nursing program or those who are or have been enrolled in the first year of the nursing curriculum.

NSG-201: Pharmacology for Nursing Practice III HS

Credit Hours:...1.00

Contact Hours:..0.93

Continues to explore the principles of safe medication administration, pharmacokinetics and pharmacodynamics, and basic pharmacology. Emphasizes how to successfully calculate dosages for more complex medication administration for the adult and pediatric client. Drug classifications covered this semester correlate with the topics covered in NSG 202 and NSG 209.

Prerequisites:................................BIO 234, NSG 118, NSG 119, and NSG 121

NSG-202: Medical-Surgical Nursing III HS

Credit Hours:...6.00

Contact Hours:.. 10.00

Focuses on nursing care and concepts related to the healthy adult client as well as the adult client with common, acute, or chronic illness exemplars. Emphasizes the use of critical thinking skills in a systematic, problem solving process, as a framework for providing safe and effec-tive care to restore and promote health in adults. Discusses how to research best practices and integrate theory in the care of adult clients and their families in a variety of clinical settings. Offers four hours of theory and six hours of clinical/lab per week.

Prerequisites:...BIO 234, NSG 118, 119, and 121

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
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COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

NSG-203: Introduction to Critical Care I   HS

Credit Hours:..2.00

Contact Hours:..2.00

Presents the beginning theoretical concepts related to caring for the critically ill client for the student or practicing nurse who is considering specializing in this area. Emphasizes the nursing responsibilities associated with meeting the needs of clients with disorders of the renal, cardiovascular, gastrointestinal, and endocrine systems.

Prerequisites:........Completion of first level nursing courses, graduate or registered nurse or Instructor permission

NSG-206: Pharmacology for Nursing Practice IV   HS

Credit Hours:..1.00

Contact Hours:..0.93

Continues to study principles of safe medication administration, pharmacokinetics, and pharmacodynamics of medications and basic pharmacology. Drug classifications studied this semester correlate with the topics covered in NSG 207 and NSG 208.

Prerequisites:..NSG 201, 202, and 207

NSG-207: Pediatric Nursing   HS

Credit Hours:..4.00

Contact Hours:..8.00

Introduces the role of the professional nurse as the provider of care for children (from infancy to adolescence) within the context of the family environment. Discusses how to utilize critical thinking skills in a systematic, problem solving process as a framework for providing safe and effective care to restore and promote health in children and to foster growth and development. Focuses on family-centered nursing care related to the concepts of healthy children as well as children with common, acute, or chronic illness exemplars. Also covers how to research best practices and integrate theory in the care of children and families in a variety of clinical settings. Two hours of theory and six hours of clinical/lab per week.

Prerequisites:..BIO 234, NSG 118, 119, and 121

NSG-208: Women's Health and Maternity Care   HS

Credit Hours:..4.00

Contact Hours:..8.00

Introduces the role of the professional nurse as the provider of care for women and their families throughout childbearing and beyond. Addresses health issues within the context of the family environment while recognizing female maturational milestones and discusses how to utilize critical thinking skills, in a systematic, problem solving process, as a framework for providing safe and effective care. Focuses on relationship-based, family-centered nursing that promotes health and manages illness when caring for the childbearing woman and her family. Coursework also discusses how to research best practices

and integrate theory in the care of women from adolescence beyond menopause, with an emphasis on maternity care. Two hours of theory and six hours of clinical/lab per week.

Prerequisites:..NSG 201, 202, and 207

NSG-209: Medical-Surgical Nursing IV   HS

Credit Hours:..6.00

Contact Hours:... 10.00

Continues to study the role of the professional nurse as the provider of care for adult clients with complex needs and as a member of the profession. Builds on previous knowledge using critical thinking skills in a systematic, problem solving process as a framework for providing safe and effective care to restore and promote health in adult clients. Focuses on nursing care and concepts related to the healthy adult client as well as, the adult client with common, acute, or chronic illness exemplars. Also explores how to demonstrate proficiency in performing increasing complex nursing skills, and how to research best practices and integrate theory into the care of adult clients and their families in a variety of clinical settings. Four hours of theory and six hours of clinical/lab per week.

Prerequisites:..NSG 201, 202, and 207

NSG-210: Healing Practices in Holistic Nursing   HS

Credit Hours:..3.00

Contact Hours:..3.00

Introduces holistic nursing including a variety of healing philosophies and practices. Covers the core values of holistic nursing (philosophy/theories, education/research, self-care, communication, and healing interventions) with a focus on the five areas of complementary and alternative therapies, including the specific interventions of cognitive therapy, relaxation, imagery, aromatherapy, and energy healing.

Prerequisites:..ENG 131 eligible

NSG-212: Professional Transitions   HS

Credit Hours:..1.00

Contact Hours:..0.93

Continues to examine the role of the professional nurse within today's health care environment. Presents how to use previously developed critical thinking skills, in a systematic, problem solving way, as a framework for providing safe and effective care within this environment. Focuses on how to effectively and efficiently transition into the role of entry-level Associate Degree Registered Nurse and the development of professional identity.

Prerequisites:..NSG 201, 202, and 207

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NSG-221: Nursing and Self-Care IV – Part I `HS`

Credit Hours:...5.00

Contact Hours:...9.00

Introduces how to develop competency in applying the nursing process in the care of adults with common medical-surgical problems affecting the cardiovascular, respiratory, endocrine, hematological, and renal system. Emphasizes principles, concepts, and factors related to the client's health state. Also covers issues, trends, legal and ethical accountability, and promotion of quality care in nursing practice.

Prerequisites:..AH 120; BIO 233, 234; ENG 131, 132; PSY 131, 253; SOC 131; NSG 120, 126, 150, 155

NSG-222: Nursing and Self-Care IV - Part II `HS`

Credit Hours:...5.00

Contact Hours:...9.00

Provides continued development of competency in the application of the nursing process to adults with common medical-surgical problems affecting the gastrointestinal, musculoskeletal, reproductive, and neurosensory systems. Discusses disaster preparedness and bioterrorism. Emphasizes principles, concepts, and factors related to the client's health state. Issues, trends, legal and ethical accountability, and promotion of quality care in nursing practice are integrated.

Prerequisites:........................ENG 131, 132; PSY 131, 253; SOC 131; AH 120; BIO 233, 234; NSG 120, 126, 150 155,

NSG-250: Nursing and Self Care V: Childbearing Family and Child and Family `HS`

Credit Hours:...7.00

Contact Hours:.. 11.60

Develops competency in using the nursing process to help the child (birth through adolescence) and child-bearing family achieve self-care goals, apply scientific principles, concepts, and factors related to the child and the family as a self-care agent. Integrates current issues, trends, legal and ethical accountability, and the promotion of quality care into nursing practice. Student spends five weeks in a pediatric setting and five weeks in an obstetrical setting.

Prerequisites:........................ENG 131, 132; PSY 131, 253; SOC 131; AH 120; BIO 233, 234; NSG 120, 126, 150, 155, 221, 222.

NSG-255: Nursing and Health Care Systems II `HS`

Credit Hours:...3.00

Contact Hours:...7.00

Emphasizes the transition from student to graduate nurse. Focuses on management strategies necessary for establishing priorities, including delegation of work when responsible for a group of patients. Also covers application of prior learning in delivery of nursing care, working relationships, legal and ethical accountability in the promotion of quality care.

Prerequisites:......AH 120; BIO 233, 234; ENG 131, 132; NSG 120, 126, 150, 155, 221, 222, 250; PSY 131, 253; SOC 131

NSG-285: Pathophysiology for Nurses `HS`

Credit Hours:...4.00

Contact Hours:...4.00

Enhances basic knowledge and understanding of human diseases. Reviews the etiology and the pathogeneses of diseases using the system approach. Also reviews etiology, risk factors, long term effects, and prognoses of commonly occurring health issues.

Prerequisites:.......................BIO-233 and BIO-234, or the equivalent with a "C" grade or better. Students waiting to enter the nursing program or those who are currently in a BSN completion program.

NSG-294: Directed Study in Nursing `HS`

Credit Hours:...2.00

Contact Hours:...2.00

Allows student nurse or registered nurse in the community to undertake an area of study to increase depth and understanding in specific, assigned areas. Critically examines topics appropriate to trends and issues in today's nursing profession and the health care delivery system. Clinical placement to increase the competency necessary for functioning at optimal level as a student nurse or as a graduate nurse can occur, as appropriate. Theory hours and clinical placement hours are arranged with the instructor, as appropriate.

Prerequisites:.................. Student in nursing program or registered nurse

OPT-101: Introduction to Ophthalmic Technology `HS`

Credit Hours:...3.00

Contact Hours:...3.00

Introduces the roles and responsibilities of health care professionals directly involved in vision care. Provides an overview of the comprehensive medical eye examination, including documentation protocol, units on ophthalmic terminology, and abbreviations. Also discusses career options and key elements of medical ethics for ophthalmic medical personnel.

Prerequisites:........ Acceptance into the Ophthalmic Technician Program

OPT-134: Ocular Anatomy and Pathology `HS`

Credit Hours:...3.00

Contact Hours:...3.00

Focuses on the structures and functions of the eye and orbit. Explains the clinical manifestations of select pathophysiologic conditions of the eye specific to ophthalmic technology.

Prerequisites:........ Acceptance into the Ophthalmic Technician Program

Courses

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OPT-150: Applied Ophthalmic Optics   `HS`

Credit Hours:..3.00

Contact Hours:..3.00

Studies the fundamental optical principles including the electromagnetic spectrum, properties of light as waves and particles, geometric optics, and object-image relationships. Develops the clinical applications of optical principles.

Prerequisites:...OPT 101, 134

OPT-160: Ocular Measurements I   `HS`

Credit Hours:..5.00

Contact Hours:..5.00

Discusses basic ophthalmic equipment and measurement protocol, instrument calibration, maintenance, and infection control. Students apply concepts to specific clinical situations related to vision care.

Prerequisites:...OPT 101, 134

OPT-180: Ocular Measurements II   `HS`

Credit Hours:..5.00

Contact Hours:..5.00

Offers an overview of special tests and procedures ordered for subspecialty services such as cornea and external disease, glaucoma, neuro-ophthalmology, oculoplastics, pediatric ophthalmology, and retina. Presents a decision-making approach to the process of data collection. Emphasizes designing an appropriate examination strategy based upon the type of problem presented.

Prerequisites:............................... OPT 101, 134, 150, 160

OPT-200: Clinical Optical Procedures   `HS`

Credit Hours:..5.00

Contact Hours:..5.00

Focuses on the physiology of image formation and refractive errors, optical calculations involving use of the retinoscope, phoropter, trial lenses and trial frame, accommodation rulers, and instruments used in evaluating contact lenses.

Prerequisites:... OPT 180

OPT-220: Ophthalmic Photography   `HS`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces imaging procedures for external and internal ocular structures, including slit lamp and fundus photography, fluorescein angiography, optical coherence tomography, and other relevant imaging techniques.

Prerequisites:... OPT 200

OPT-240: Ophthalmic Surgical Assisting   `HS`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces ophthalmic surgical procedures, including the indications, goals, and steps of select ophthalmic procedures. Emphasizes principles of asepsis, and care and maintenance of ophthalmic surgical instruments.

Prerequisites:... OPT 200

OPT-260: Current Issues in Vision Care   `HS`

Credit Hours:..1.00

Contact Hours:..0.93

Explores issues and trends in healthcare delivery, including certification requirements and systematic review for the national certification examination for ophthalmic technicians.

Prerequisites:...OPT 220, 240, 293

OPT-290: Clinical Externship I   `HS`

Credit Hours:..4.00

Contact Hours:.. 15.87

Offers structured clinical experiences in which students observe and participate in selective practical activities at affiliating ophthalmology clinics. Discusses skill development in charting, communicating with patients, performing non-invasive tests, calibrating, and maintaining ophthalmic equipment typical to a standard exam room. Requires students to document 240 clinical hours.

Prerequisites:... OPT 180

OPT-293: Clinical Externship II   `HS`

Credit Hours:..6.00

Contact Hours:.. 23.87

Continues structured clinical experiences while emphasizing speed, accuracy, and clarity in advanced clinical skills. Students must document 360 clinical hours.

Prerequisites:... OPT 290

OPT-297: Clinical Externship III   `HS`

Credit Hours:..6.00

Contact Hours:.. 21.20

Continues structured clinical experiences with emphasis on gaining autonomy in performing basic procedures, while adding new experiences in digital imaging and surgical assisting. Students must document 320 clinical hours.

Prerequisites:... OPT 293

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PEFT-108: Portfolio Development   IT   C

Credit Hours:..1.00

Contact Hours:..0.93

Covers the methods and processes needed to develop a portfolio in order to request college credit for experiential or other college-level learning activities.

Prerequisites:... None

PEFT-112: Technical Communication-Power   IT   C

Credit Hours:..2.00

Contact Hours:..2.00

Covers written and oral communications utilized in the power engineering field. Includes reading and interpreting plant-oriented communications such as diagramming, drawing, review, and regular use of PID, CAD-type prints, piping, and system prints.

Prerequisites:... None

PEFT-143: Power Engineering Boilers   IT   C

Credit Hours:..3.00

Contact Hours:..3.00

Covers the operation and maintenance of high- and low-pressure boilers and their related auxiliaries. Includes elements required to safely operate, service, and maintain boiler and auxiliary equipment pertaining to state-of-the-art cogeneration and heating and power plants. Learners are required to interface with actual or virtual plants as part of the activities for this course. May require plant visits as part of course work.

Prerequisites:... None

PEFT-180: Power Heating Plant Lab   IT   C

Credit Hours:..2.00

Contact Hours:..2.00

Covers operation and maintenance, and power engineering fundamentals for basic power and heating plants. Includes lab and/or field experiences on live equipment and systems found in heating, process, and power plants. May complete plant visits as part of course work.

Prerequisites:..Instructor permission

PEFT-182: Power Fundamentals Lab   IT   C

Credit Hours:..2.00

Contact Hours:..2.00

Explores power plant and heating plant layout and equipment via lab and/or field experiences. Covers processes to start up and shut down boilers, operate pumps, test, and maintain boiler water quality. Includes working with the fundamental principles of direct current and alternating current circuits and machines; and the basics of industrial measurement and control with emphasis on power plant instrumentation. May complete plant visits as part of course work.

Prerequisites:..Instructor permission

PEFT-184: Power Systems Operation and Maintenance Lab   IT   C

Credit Hours:..2.00

Contact Hours:..2.00

Provides lab and/or field experiences related to high-pressure and low-pressure boilers, turbines, generators, and auxiliary systems. Includes starting, stopping, operating, and analyzing outputs under load conditions. May be required to visit plants as part of course work.

Prerequisites:..Instructor permission

PEFT-246: Steam Plant Prime Movers   IT   C

Credit Hours:..3.00

Contact Hours:..3.00

Covers skills needed to function effectively as power or process plant engineers operating and maintaining primarily turbines, engines, power plant electrical, air compressors, industrial-commercial cooling systems, advanced control systems, and related equipment. Provides exposure to activities that duplicate skills in the workplace which meet the requirements of various national standards and license exams. May require plant visits as part of course work. Note: suggested co-requisite of MFMT 114 and/or MFMT 143.

Prerequisites:... None

PEFT-247: Combined and Cogeneration Power Plants   IT   C

Credit Hours:..3.00

Contact Hours:..3.07

Examines the power engineering skills and knowledge required for operation and maintenance of gas turbine and combined cycle plants. Also covers the safe and efficient operation of gas turbines and heat recovery steam generators and their different applications as used in combine cycle and cogeneration configurations. Experiences and exercises include the application of workplace skills required by the current national standards and appropriate licensure exams. Completion of plant visits are part of course work.

Prerequisites:..Instructor permission

PEFT-249: Energy System Test and Measurement Analysis   IT   C

Credit Hours:..2.00

Contact Hours:..3.00

An advanced energy assessment course covering necessary commercial-industrial plant and facility testing required for obtaining output efficiency results on energy systems and equipment. Examines control concepts and performance characteristics and their application. Study includes use of controls and test instrumentation and equipment for determining productive and efficient operation in areas such as combustion, power demand, input and use of energy and environmental elements or other processes in power plants to ensure equipment is operating efficiently and within the specified range. Mandatory laboratory activities or authentic field activities.

Prerequisites:...................................TAFD 117, CIS 100, or equivalent course

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PEFT-262: Commercial-Industrial Energy System Assessment-Auditing   IT C

Credit Hours:...3.00

Contact Hours:..5.07

An advanced-level energy auditing course centering on commercial and industrial facilities. Students must study energy applications and apply energy knowledge and skills directly and practically to the technical, economic and regulatory aspects of effective energy management for commercial-industrial energy systems. Discusses coverage of basic energy policy and legislation and offers an analysis and a problem solving structure for those who require the latest energy commercial-industrial techniques and strategies. Laboratory applications emphasize commercial-industrial energy system applications requiring the use of current DOE-EERE software and specialist programs for energy calculations, analysis and simulations. This course requires students to complete field experience activities, collect data in the field or in labs, and/or complete authentic field activities to pass the course.

Prerequisites:...............................ENT 141, 145, and 256 or equivalent field experience or Instructor permission

PEFT-297: Special Topics in Power/Building Engineering, Commercial/Industrial Energy   IT C

Credit Hours:...2.00

Contact Hours:..2.00

Explores and/or takes advantage of selected topics, available certifications, available licensing and direct completion/application of available programs through DOE-EERE and similar organizations as determined by the academic department and the instructor. Emphasizes current power, process and industrial-commercial energy field trends and requirements. Specific special topic may be announced together with the prerequisites each term. Course can be repeated when different topics are offered, allowing students to earn credit for each different topic.

Prerequisites:.. None

PEFT-298: Special Topics In Power/Building Engineering, Commercial/Industrial Energy   IT C

Credit Hours:...3.00

Contact Hours:..3.00

Explores and/or takes advantage of selected topics, available certifications, available licensing and direct completion/application of available programs through DOE-EERE and similar organizations as determined by the academic department and the instructor. Emphasizes current power, process and industrial-commercial energy field trends and requirements. Specific special topics may be announced together with the prerequisites for each term. The course can be repeated when different topics are offered allowing students to earn credit for each different topic.

Prerequisites:.. None

PHIL-130: Introduction to Philosophy   SSAF

Credit Hours:...3.00

Contact Hours:..3.00

An introduction to the perennial problems that have occupied philosophers primarily in the Western tradition, including appearance vs. reality, the mind/body problem, free will vs. determinism, the nature of morality, the existence of God, and the justification of political power.

Prerequisites:...ENG 079 eligible

PHIL-131: Introduction to Logic   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Examines the methods and principles of assertion and validity in argumentation. Includes the study of the nature of logic and its relationship to language, informal fallacies, and both traditional and modern symbolic methods of deduction.

Prerequisites:.. None

PHIL-133: History of Philosophy to the 18th Century   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the history of Western philosophy from its origins in ancient Greece to the rise of science. Includes a study of pre-Socratics, major Greek philosophers, medieval philosophy, and rationalist and empiricist philosophy of the modern era.

Prerequisites:.. None

PHIL-135: History of Modern Philosophy   SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

A continuation of the history of Western philosophy focusing on the major philosophers and major developments through the twentieth century from Descartes through Wittgenstein. Examines influential currents such as rationalism, empiricism, idealism, romanticism, Marxism, Darwinism, positivism, pragmatism, phenomenology, existentialism and analysis.

Prerequisites:.. None

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PHIL-137: Topics in Philosophy   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

A non-historical approach to philosophy for serious students interested in the professions or for professionals interested in focusing on topics of professional or personal significance. Section offerings are sufficiently diverse to acquaint serious students or professionals with the extensive scope of philosophy. Diverse areas such as philosophy of religion, philosophy of science, aesthetics, philosophy of law, business ethics, biomedical ethics, philosophy of language, etc. may be the current topic offered that semester. Topics vary each semester and with each instructor.

Prerequisites:.. None

PHIL-138: Moral Issues in Biotechnology   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Introduces moral dilemmas that arise in the context of biotechnology and the theories and skills required to engage in high quality dialogue concerning those dilemmas. Includes study of the basic nature of biotechnology and the most influential theories of ethics and justice as relates to biotechnological research and products.

Prerequisites:.. None

PHIL-139: Ethics   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Emphasizes practical and normative ethical questions as well as analytical or metaethical questions. Provides a systematic examination of problems by covering various classical and contemporary theories which include standards of criteria of moral action, the nature and justification of moral judgments, the nature of ethical knowledge, the meaning of ethical terms, intelligent decision-making, and free will vs determinism.

Prerequisites:.. None

PHIL-201: Eastern Philosophy   SSAF

Credit Hours:..3.00

Contact Hours:...3.00

An exploration of the metaphysical, epistemological, and ethical frameworks of select philosophical traditions rooted in East Asia.

Prerequisites:...ENG 131 Eligible

PHT-100: Introduction to Pharmacy Technology   HS

Credit Hours:..2.00

Contact Hours:...2.00

Introduces the role of pharmacy technician in the delivery of pharmacy services. Discusses ethical, legal, and professional issues related to the practice of pharmacy. Emphasizes pharmaceutical terminology, specific distribution systems, pharmacy standards, and the role of the technician.

Prerequisites:....................Acceptance into Pharmacy Technician Program

PHT-119: Outpatient Pharmacy Externship   HS

Credit Hours:..2.00

Contact Hours:...8.40

Students are assigned to selected outpatient pharmacy facilities for directed clinical practice in pharmacy technology. This is a required, supervised learning experience under the direction of a pharmacist. Rotation selections include community, independent, and hospital outpatient pharmacy locations. The eight-week clinical rotation includes sixteen hours per week in the clinical area.

This eight-week externship rotation begins in March during the winter semester. Students are required to be enrolled and have passing grades in PHT 125, PHT 165, PHT 175, and PHT 178 before being assigned to an outpatient externship rotation.

Prerequisites:... PHT 100, PHT 124, PHT 132, PHT 150

PHT-124: Pharmacology I for Pharmacy Technicians   HS

Credit Hours:..3.00

Contact Hours:...3.00

The first of a two-course sequence in pharmacology for pharmacy technicians. Examines general pharmacological concepts, principals, actions, side effects, dosage forms, and route of administration. Covers concepts in drug development, medication errors, and drug usage. Focuses on pharmacodynamics, autonomic nervous system, central nervous system, and cardiovascular system. In addition, special emphasis is paid to drug effects upon the nervous system.

Prerequisites:............Acceptance into the Pharmacy Technician program

PHT-125: Pharmacology II for Pharmacy Technicians   HS

Credit Hours:..3.00

Contact Hours:...3.00

The second part of a two-course sequence which covers systems including respiratory, gastrointestinal, endocrine, ophthalmic, optic, and renal. Highlights chemotherapy and infection control. Also studies muscle relaxants, topical, vitamins, and nutritional supplements. Discusses how to recognize inconsistencies in orders, routes of administration, and frequency of administration.

Prerequisites:...PHT 100, 124

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PHT-132: Basic Pharmacy Software Applications `HS`

Credit Hours:..2.00

Contact Hours:...2.00

Introduces various specialized pharmacy programs: out-patient and in-patient medication dispensing, drug information, pharmacokinetics, management, quality assessment, and procurement. Emphasizes record keeping, third-party billing, and drug distribution systems.

Prerequisites:...................Acceptance into Pharmacy Technician Program

PHT-144: Pharmacy College Admission Testing (PCAT) and Current Issues in Pre-Pharmacy `HS`

Credit Hours:..2.00

Contact Hours:...2.00

Provides an overview of the pharmacy profession including licensure, areas of practice, communications skills, and career options. Examines general pharmacy school information including the Pharm D curriculum, considerations in selecting a College of Pharmacy, and admission requirements. Offers a mock PCAT exam to determine student strengths and weaknesses and then discusses select test preparation options. Recommended co-requisites: CHEM 142, ENG 132, PHYS 131, and SPC 131.

Prerequisites:............. BIO 152, BIO 150, CHEM 141, ENG 131, and CIS 100

PHT-150: Pharmaceutical Calculations `HS`

Credit Hours:..3.00

Contact Hours:...3.00

Examines how to apply basic mathematical skills in calculations required for the usual dosage determinations, as well as solution preparations using weight, metric, household, and apothecary systems. Discusses ratio and proportion, allegations, and business calculations in pharmacy operations. Two lecture hours and one computer lab hour per week.

Prerequisites:...Acceptance into the PHT Program and MATH 100, MATH 101, MATH 1094 or MATH 110, or higher with a C or better within 5 years.

PHT-165: Issues in Pharmacy `HS`

Credit Hours:..2.00

Contact Hours:...2.00

Explores today's health care environment, emphasizing the issues facing pharmacy and the pharmacy technician. Discusses the skills, talents, and tools required to handle today's challenges as well as potential future issues. Covers workplace topics such as communication issues, CQI for the pharmacy, legal issues, teamwork concepts, and conflict resolution tools.

Prerequisites:...PHT 100, 124

PHT-175: Applied Pharmacy Systems `HS`

Credit Hours:..4.00

Contact Hours:...4.00

Covers medication distribution systems including in-patient systems, preparation of intravenous admixtures, compounding, manufacturing and repackaging, and inventory control systems. Also studies inpatient software for order entry and patient profiles. Two hours of lecture and two hours of laboratory per week.

Prerequisites:..PHT 100, 124, 132, and 150

PHT-178: Applied Out-Patient Pharmacy Systems `HS`

Credit Hours:..2.00

Contact Hours:...2.00

Presents out-patient medication dispensing systems, including prescription dispensing to ambulatory patients, pharmaceutical extemporaneous compounding, repackaging and manufacturing, purchasing, and inventory control. Also covers out-patient software for order entry, third-party insurance billing, and patient profiles. Introduces the use of automated equipment.

Prerequisites:..PHT 100, 124, 132, and 150

PHT-193: Pharmacy Externship `HS`

Credit Hours:..3.00

Contact Hours:... 15.87

Students are assigned to selected health care facilities for directed clinical practice in pharmacy technology. This is a required, supervised learning experience under the direction of a pharmacist. Rotation selections include hospital, home infusion, compounding, and long term care pharmacy locations. The rotations include a ten to twelve week spring, summer, or fall session. Time scheduled at the site will be twenty-four or thirty-two hours a week.

The ten or twelve week externship rotation begins in May, July, or August. Successful completion of all pharmacy technician course work is required before assignment to specific hospital and home infusion/long term care pharmacy rotations.

Prerequisites:.......................AH 100, HCS 131, BBA 110, PHT 125, PHT 165, PHT 119, PHT 175, PHT 178

PHYS-120: Technical Physics I `MS`

Credit Hours:..4.00

Contact Hours:...5.00

Introduces students majoring in technical areas to basic physical principles and their application to industry. Covers measurements, forces, motion, vectors, energy, power and machines, properties of materials and fluids, heat, and heat transfer.

Prerequisites:.......Completion of or concurrent enrollment in MATH 103

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PHYS-121: Technical Physics II   MS

Credit Hours:..4.00

Contact Hours:...5.00

Builds on concepts introduced in PHYS 120. Topics include wave motion, electricity, and DC electrical circuits, atomic physics, and nuclear physics.

Prerequisites:..PHYS 120 with a grade of C or better

PHYS-131: General Physics I   MS

Credit Hours:..4.00

Contact Hours:...6.00

Introduces the principles of physics, including units on mechanics, heat, and sound. Partially fulfills the physics requirement in pre-medicine, pre-dentistry, teaching, and law. Three hours of lecture and three hours of laboratory per week.

Prerequisites:............................. MATH 103 or MATH 112 or MATH 175 with a C or better or placement into MATH 180 on the placement test.

PHYS-132: General Physics II   MS

Credit Hours:..4.00

Contact Hours:...6.00

Builds on the concepts introduced in PHYS 131. Topics include electricity, magnetism, light, and modern physics. Three hours of lecture and three hours of laboratory per week.

Prerequisites:...PHYS 131 with a C grade or better

PHYS-133: Principles of Physics   MS

Credit Hours:..4.00

Contact Hours:...5.00

Explores physical principles of motion, energy, fluids, electro-magnetism, waves, light, radiation, and the atom. Course is designed to meet the need for a one semester course in physics in many program areas including Allied Health, Teacher Education, Business, and Social Science. Three hours of lecture and two hours of laboratory per week.

Prerequisites:........One year of high school algebra or equivalent at HFC MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH-080

PHYS-231: Engineering Physics I   MS C

Credit Hours:..5.00

Contact Hours:...7.00

Designed to meet the requirements of engineering students and physics majors. Emphasizes relating physical principles to mathematical techniques in problem solving. Covers mechanics, wave motion, and thermodynamics. Four hours of lecture and three hours of laboratory activities per week. NOTE: Recommended co-requisite is MATH-183.

Prerequisites:...MATH 180 with a C grade or better

PHYS-232: Engineering Physics II   MS C

Credit Hours:..5.00

Contact Hours:...7.00

Designed to meet the requirements of engineering students and physics majors. Emphasizes how to relate physical principles to mathematical techniques in problem solving. Covers electromagnetism, including the study of fields, circuits, and optical systems. Four hours of lecture and three hours of laboratory activities per week. NOTE: Concurrent enrollment in MATH-280 is recommended.

Prerequisites:...PHYS-231 with a C grade or better and MATH-183 with a C grade or better

PHYS-233: Modern Physics   MS

Credit Hours:..4.00

Contact Hours:...7.00

Builds on concepts introduced in PHYS 232. Topics include relativity, atomic and nuclear physics, solid state physics, and fundamental particles. The application of mathematics is limited to elementary use of the wave mechanical approach to quantum mechanics. Four hours of lecture and three hours of laboratory activities per week. NOTE: MATH 289 is a recommended co-requisite.

Prerequisites:.............. PHYS 232 with a C grade or better, and MATH 280

PLGL-100: Essential Paralegal Skills   BCT

Credit Hours:..2.00

Contact Hours:...2.00

Explores on-the-job realities of the paralegal profession with emphasis on the daily operations of a law office and the role of the paralegal in the office. Covers time management, billing, writing appropriate legal communiqués, and communicating with clients.

Prerequisites:...ENG-131 Eligible

PLGL-110: Legal Ethics   BCT

Credit Hours:..2.00

Contact Hours:...2.00

Presents the laws and regulations of paralegals, attorneys, and non-attorney employees in the legal industry while emphasizing professional and ethical responsibilities. Examines portions of the Michigan Rules of Professional Conduct and focuses on the unauthorized practice of law, client confidentiality, conflicts of interest, advertising and solicitation, and the handling of client funds.

PLGL-115: Property Law   BCT

Credit Hours:..3.00

Contact Hours:..3.00

Explores different types of real property ownership and the rights and liabilities associated with each type. Examines the anatomy of a real estate closing, real property leases, the laws surrounding foreclosure and eviction. Covers the drafting of documents relevant to both the acquisition and loss of real property.

Prerequisites:.......PLGL 100 and ENG 131 - both with a C grade or better

PLGL-126: Legal Research   BCT

Credit Hours:..4.00

Contact Hours:..4.00

Examines the structure of the court systems and sources of law in the context of conducting legal research; covers how to locate and understand statutory, regulatory, and common law; examines how to identify real or hypothetical legal issues and then develop a research plan. Covers how to perform legal research using Westlaw® and other Internet-based research databases.

Prerequisites:....... PLGL-100 and ENG-131, both with a C grade or better

PLGL-190: Co-op in Paralegal Studies   BCT C

Credit Hours:.. 1.00

Contact Hours:..4.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:....................................Permission from Career Services Officer or Cooperative Education Officer

PLGL-200: Civil Litigation I   BCT

Credit Hours:..4.00

Contact Hours:..4.00

Examines civil trials, beginning with a review of the pleadings that initiate a civil law suit and concluding with the trial. Covers pre-trial practice, pre-trial motions, trial preparation, and offers a mock-trial experience. Also explores Alternative Dispute Resolution (ADR), post-trial motions, and appeals.

Prerequisites:.......ENG 131 and PLGL 120 - both with a C grade or better

PLGL-220: Personal Injury Litigation   BCT

Credit Hours:..3.00

Contact Hours:..3.00

Explores civil litigation in the context of a personal injury or product liability action. Introduces the substantive laws of negligence, intentional tort, personal-injury, and product liability.

Prerequisites:.... PLGL 120 and ENGL 131 - both with a C grade or better

PLGL-226: Legal Writing   BCT

Credit Hours:..4.00

Contact Hours:..4.00

Explores how to identify legal issues and perform advanced-level research using Westlaw® and other Internet-based research databases. Covers application of the law to a hypothetical fact scenarios and presenting results in an objective memorandum, persuasive brief, or oral argument, using appropriate legal terminology and citation.

Prerequisites:....... PLGL-126 and ENG-131, both with a C grade or better

PLGL-235: Commercial Transactions   BCT

Credit Hours:..3.00

Contact Hours:..3.00

Explores the fundamental principles of contract law. Covers the elements of contract formation and breach under common law and Article II of the Uniform Commercial Code (UCC). Discusses the laws of secured transactions under Article IX of the UCC, Bankruptcy Laws, and the laws and practices of collecting debt upon default.

Prerequisites:.......PLGL 120 and ENG 131 - both with a C grade or better

PLGL-240: Family Law   BCT

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the laws of divorce, beginning with the pre-commencement interview and ending with filing the final judgment. Covers the substantive and procedural laws of property division, custody, and support in a divorce action. Also examines issues of child abuse, domestic violence, adoption, and post-judgment matters such as modification and relocation.

Prerequisites:.......ENG 131 and PLGL 120 - both with a C grade or better

PLGL-245: Estate Planning and Probate   BCT

Credit Hours:..3.00

Contact Hours:..3.00

Examines laws relating to the control and disposition of property in anticipation of death and post-death under Michigan's Estate and Protected Individuals Code (EPIC). Covers wills, trusts, laws of intestate succession, and powers of attorney. Also covers the substantive, procedural, and practical aspects of probate practice under EPIC from the time of the notification of death through final distribution.

Prerequisites:......ENG 131 and PLGL 120 - both with a C grade or better

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
COM	Communications Division	MS	Math and Science Division
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Courses

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PLGL-250: Business Organizations **BCT** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Examines forms of business organizations including corporations, partnerships, and limited liability companies. Covers the formation, structure, rights, and liabilities associated with each entity, along with the legal consequences of dissolving them. Covers the drafting of documents necessary to create and maintain business entities.

Prerequisites:.......ENG 131 and PLGL 120 - both with a C grade or better

PLGL-290: Co-op in Paralegal Studies **BCT** **C**

Credit Hours:..2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:...................................Permission from Career Services Officer or Cooperative Education Officer

PLGL-299: Special Topics in Law **BCT**

Credit Hours:..3.00

Contact Hours:..3.00

Explores selected legal topics with emphasis on current legal trends. Specific special topic will be announced each term the course is offered. Course may be repeated when different topics are offered and a student may earn credit for each different topic. Course may be used toward fulfilling the specific degree requirements for an associate degree.

Prerequisites:.................ENG 131 with a grade of C or better, or Instructor permission

PLMB-101: Fundamentals of Plumbing and Pipefitting **IT**

Credit Hours:..3.00

Contact Hours:..3.00

Introduces plumbing principles. Topics include the proper selection of materials for installation and repair of gas, domestic water, sewer, soil, waste, vent systems, and various pipefitting systems. Utilizes blueprints and isometric diagrams throughout the course. Some laboratory activities.

Prerequisites:... None

PLMB-110: Drains, Wastes, and Vents **IT**

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the Michigan State Plumbing Code and the proper selection of materials for the installation and repair of sewer, soil, waste, and vents systems. Covers proper procedures for the design, sizing, and construction of residential plumbing systems. Introduces commercial systems and plumbing cross-connections. The use of blueprints and isometric diagrams are reviewed throughout the course. Also includes how to test plumbing systems in their various stages.

Prerequisites:... None

PLMB-120: Steam and Hot Water Systems **IT**

Credit Hours:..2.00

Contact Hours:..2.00

For technical construction apprentices and those interested in seeking basic pipefitting -plumbing skills. Introduces principles of steam and hydronic systems, converter trap sizing, steam traps, and skimming boilers. Also examines the proper selection, sizing, and installation of pipe and fittings related to hydronic and steam systems. Application exercises allow students the opportunity to design and lay out typical systems. Laboratory activities.

Prerequisites:..ENT 103, ENT 104, and ENT 105

PLMB-225: Plumbing Design **IT**

Credit Hours:..4.00

Contact Hours:..4.00

Topics include health and safety, water supply, water wastes, piping materials, and building plans and drawings. The proper use of plumbing tools and equipment selection emphasizing overall job safety is integrated into the course material. Also covers the components of plumbing systems and installations.

Prerequisites:.. ENT 124 and PLMB 110

PLMB-240: Plumbing Materials and Components **IT**

Credit Hours:..4.00

Contact Hours:..4.00

Examines water distribution and pipe sizing. Topics include hot water systems, tanks, drains, wastes, vent systems, construction drawings and diagrams, and system sizing. Introduces material joining through soldering, and brazing, Includes the various plastic pipes and fittings being used in today's industry. Explores how to evaluate issues related to water pipe sizing in buildings, including concepts of water flow and water supply fixture units.

Prerequisites:..PLMB 101 and 110

Courses

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PLMB-250: Plumbing Pipefitting Code **IT**

Credit Hours:..2.00

Contact Hours:...2.00

Explores how to utilize the State of Michigan Plumbing Code to solve real-life problems (International Plumbing Code). Covers study habits and processes necessary to interpret and apply the code. Also helps prepare students for entry- level positions in the plumbing, multi-skilled maintenance, repair, and apprenticeship fields.

Prerequisites:... None

PLMB-255: Plumbing Fixture Installation **IT**

Credit Hours:..4.00

Contact Hours:...4.00

Covers the operation and availability of common plumbing fixtures and appliances. Focuses on the selection and installation of fixtures in residential, commercial, and industrial applications. The control and accessories used in fuel burning appliances, the differences in vent capacity and vent type, and the steps necessary to place an appliance in service are covered. Explores how electricity is incorporated into a piping system including concepts of energy savings and safety.

Prerequisites:..PLMB 101, 110

PLMB-275: Practical Plumbing Lab for State License Preparation **IT**

Credit Hours:..4.00

Contact Hours:...4.00

For the apprentice and journeyman. Covers the subject of pipes and tubes, their uses, the materials of which they are made, and some of the related general specifications. Also covers existing and new process skills related to plumbing-pipefitting. Course is 25% lecture related to safety, tools, equipment, and demonstrations prepping; the rest of the course emphasizes laboratory activities.

Prerequisites:..Instructor permission

POLS-101: American Government: Democratic Participation and Civic Engagement **SSAF** **C**

Credit Hours:..4.00

Contact Hours:...4.00

Examines principles and problems of American political institutions, including the role of government and politics in society, the balancing of liberty with authority, and the theories of the state. Probes mechanisms of citizen empowerment and control (public opinion, pressure groups, political parties, elections), and formal structure. Public policy as a means to meet societal needs is analyzed and evaluated along with the tools that citizens can use to influence the public policy process. Also examines foreign and domestic public policy and contemporary events. Includes how to write effective arguments as well as how to formally present political arguments.

Prerequisites:..ENG 079 eligible

POLS-110: Introduction to Community Leadership **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

An introductory course for students in the Community Leadership program. Acquaints individuals with community organizations, social change, and the social history of metro Detroit since 1950. This course is a pre-requisite to the other required course in the Community Leadership program.

Prerequisites:... Eligible for ENG 081 and ENG 093

POLS-111: Foundations of Community Leadership **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Focuses on the history of community organizing, development, and change, including the history of Detroit and its cultural and racial diversity. Presents models of community organizing including social action, grass roots empowerment, leadership development, team building, and advocacy.

Prerequisites:..POLS 110 or permission of instructor

POLS-131: Introduction to American Government and Political Science **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Examines principles and problems of American political institutions, including the role of government and politics in society, the balancing of liberty with authority, and theories of the state. Also explores mechanisms of popular control (public opinion, pressure groups, political parties, elections) and formal structure. Additional components include foreign policy, public policy, and contemporary events.

Prerequisites:...ENG 079 or 092 eligible

POLS-135: American Legal Systems and Processes **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Considers legal systems as social/political phenomena and explores the U.S. Constitution, landmark court decisions, and patterns of behavior characterizing legal system participants. This course is appropriate as a lead-in for those interested in the fields of political science, criminal justice, legal secretary, and paralegal, as well as those considering law school.

Prerequisites:...ENG 079 eligible

BCT	Business and Computer Technology Division	
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COM	Communications Division	
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Courses

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POLS-152: International Relations   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the diverse phenomena of international relations, the complex patterns of political and economic conflict, American foreign policy, and the interdependence between nation-states and non-governmental organizations. Coursework encourages the student to think critically and analytically about the world and develop a healthy skepticism toward simple solutions to complex world problems.

Prerequisites:...ENG 092 or 093 eligible

POLS-155: State and Local Governmen   **SSAF** **C**t

Credit Hours:..3.00

Contact Hours:..3.00

Examines political institutions and processes in the fifty states, including their cultures and constitutions, as well as the public policies of state governments in areas such as education, social welfare, and the environment. Uses Michigan and Metropolitan Detroit as a basis for comparison to study state and local governments. This course is appropriate as a lead-in for those interested in the fields of political science, public administration, and criminal justice.

Prerequisites:...ENG 079 eligible

POLS-200: Introduction to Peace and Conflict Studies   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Examines social, political, economic, ethnic, cultural, and religious conflict and the methods used to resolve, regulate, and prevent conflict. The mechanisms for developing cooperation to resolve and mitigate conflict among peoples and states are central to this course. Also focuses on international and intra-state conflicts including civil wars, social strife, and rebellion, and employs case studies and other scientific methods to investigate specific conflicts and the strategies of conflict resolution.

Prerequisites:...ENG 092 or 093 eligible

POLS-201: Public Policy: Topics and Analysis   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

A special topics course that allows students to explore issues of public policy. Focuses on the basics of public policy including agenda setting, policy formulation, policy implementation, and policy evaluation. Themes may vary. Themes may be specific such as healthcare policy or they might be more general such as state and local economic policy. Guest speakers.

Prerequisites:............................... ENG 093 eligible or Instructor permission

POLS-202: Foreign Policy: Topics and Analysis   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

A special topics course that allows students to explore various issues in foreign policy. Focuses on American foreign policy including military, diplomatic, and trade policy. Themes vary from semester to semester. In addition, themes may be very specific such as nuclear weapons proliferation or more general such as American foreign policy in the Middle East or global trade. Guest speakers.

Prerequisites:............................... ENG 093 eligible or Instructor permission

POLS-295: Community Leadership Internship   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Provides training opportunities with local community organizations. Students engage directly with various community organizations in order to gain experience with data collection, facilitating meetings, recruiting new members, fund raising, and project management.

Prerequisites:.. SOC 212

PSCI-131: Introduction to Physical Science   **MS**

Credit Hours:..4.00

Contact Hours:..5.00

Topics explored include physics, chemistry, astronomy, meteorolgy, and geology. Non-science majors have an opportunity to better understand and appreciate the interaction between energy and matter in nature. Laboratory experiences are designed to improve scientific interest and to develop confidence in dealing with science.

Prerequisites:... None

PSCI-133: Atomic Science   **MS**

Credit Hours:..2.00

Contact Hours:..2.00

A non-mathematical introduction to the basic concepts of atomic energy. Designed to help the non-scientific student enjoy and appreciate current trends in science, nuclear reactions, and atomic energy. Empasis is on historical and philosophical contexts. Effort is made to place concepts in their relation to prevalent world thinking. Two hours of lecture per week.

Prerequisites:... None

Courses

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
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PSCI-135: Sound & Light in Fine-Arts   MS

Credit Hours:..4.00

Contact Hours:..5.00

The physical nature of sound and light waves will be covered focusing on how they relate to music, art, theater and each other as well as how subjective perceptions of the ear and eye are related to objective properties of waves. Offered as a general education science course for students interested in Fine-Arts, specifically, Music, Art or Theater.

Prerequisites:.. None

PSY-131: Introductory Psychology   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Introduces elementary concepts and principles related to the scientific study of behavior and of the mental processes of cognition and affective states. Variables examined include the history of psychology, the scientific method, theory, biological foundations, psychological processes related to cognition and affective states, developmental changes over time, and applications related to healthy and unhealthy personalities.

Prerequisites:...ENG 081 Eligible

PSY-152: Child Psychology   SSAF

Credit Hours:..3.00

Contact Hours:..3.00

Covers the physical, emotional, intellectual, and social development of the child and adolescent. Explores a variety of theories, recent research, and practical application.

Prerequisites:...PSY 131 with grade of C or higher

PSY-161: Human Sexuality   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Designed to help students evaluate their own attitudes, feelings, and beliefs about sexuality and compare them to those held by others. Frank, open discussions and explicit visual materials cover historical and contemporary issues related to the physiological, emotional, cultural and legal implications of sexuality with emphasis on the expanding research that is contributing to serious intellectual inquiry.

Prerequisites:..PSY 131 with C grade or higher

PSY-251: Abnormal Psychology   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Explores the nature, causes and treatments of various forms of psychopathology recognized in both the Western and non-Western world. Examines these disorders from the perspectives of both historical and modern paradigms with emphasis on evidence-based approaches.

Prerequisites:...PSY-131, C or better

PSY-253: Lifespan Development   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Covers the processes of change and stability in human development from conception through death. Course begins with the study of prenatal concerns and progresses through the years of infancy, childhood, adolescence, adulthood and aging. Discusses theory, research, and application associated with the biological, cognitive, affective, and social domains of development.

Prerequisites:..PSY 131 with a C grade or higher

PSY-254: Social Psychology   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the social forces affecting people's lives and how people affect their group. Examines three areas of behavior resulting from intentional influence, membership in a group, and social interaction. Also explores self-perception, behavior and attitude, attraction, aggression, altruism, and group processes. May be taken for credit in either psychology or sociology but not both.

Prerequisites:......................PSY 131 and SOC 131 or Instructor permission

PSY-256: Educational Psychology   SSAF

Credit Hours:..3.00

Contact Hours:..3.00

Applies the principles and theories of educational psychology to teaching and learning in diverse school settings. Topics address learning and cognition. C Course work examines how social, emotional, cognitive, and physical development of children proceeds academically. Also explores multicultural educational programs, principles and teaching methodologies, managing classroom discipline, motivating students to learn, leading classroom instruction, and assessing K-12 differences in students' learning.

It is recommended that PSY 256 not be taken concurrently with PSY 152.

Prerequisites:..ENG 131, ENG 132, and PSY 131 with a C grade or higher

PSY-257: Health Psychology   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Explores the psychological dimensions of health and the prevention and management of illness. Emphasizes interaction between biological, social, and psychological factors in health and medical problems. Topics include the history and research methods of health psychology, biological foundations of health and illness, stress, prevention and positive psychology, nutrition and eating disorders, substance abuse, disease and pain, complementary and alternative medicine, and the role of health psychology in healthcare settings.

Prerequisites:..PSY 131 with a C grade or higher

BCT	Business and Computer Technology Division	IT	Industrial Technology Division
C	Credit for Prior College-level Learning	HS	Health Sciences Division
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PSY-260: Adolescent Psychology   SSAF C

Credit Hours:...3.00

Contact Hours:...3.00

For students seeking a degree in secondary education and/or psychology. Examines the major areas of adolescent behavior and development including social, emotional, physical, and cognitive development. Among the topics included are: the theoretical construct of adolescent, the physical and cognitive development of the adolescent, the social structure surrounding the adolescent, the transitions from upper elementary to middle school and then to high school, the personality development of the adolescent, the psycho-sexual development of the adolescent, as well as the psychological issues facing the adolescent.

Prerequisites:...................................PSY 131 with a C grade or higher

PSY-296: The Exceptional Child   SSAF C

Credit Hours:...3.00

Contact Hours:...3.00

Focuses on the characteristics, identification, assessment, and instruction of students with exceptionalities. Explores special education children's syndromes and their learning environments. Covers how to provide free and appropriate academic services to children with exceptionalities. Includes the theories, laws, and procedures surrounding special education. Course topics also include specific learning disabilities, autism, mild and severe behavior disorders, emotional impairment, mental retardation, visual and hearing impairments, speech impairment, giftedness, physical impairments and chronic medical conditions. Additional discussions revolve around different special education learning environments such as inclusion, mainstreaming, pullout programs, resource rooms, co-teaching environments, and the self-contained classroom.

Prerequisites:....................................PSY 131 with C grade or higher

PTA-102: Introduction to Physical Therapy Practice   HS

Credit Hours:...2.00

Contact Hours:...2.00

Introduces the field of physical therapy. Discusses the roles of various health professionals, the concept of the rehab team, the history and scope of physical therapy, legal and ethical issues related to communication and the practice of physical therapy, and organizational structures of various types of physical therapy facilities. Also covers the role of the PTA, various methods of documentation used in physical therapy, and the structure and function of the American Physical Therapy Association. Examines current issues and trends in physical therapy and the Guide to PT Practice.

Prerequisites:.....................................Admission to the PTA program

PTA-110: Therapeutic Techniques for PTAs I   HS

Credit Hours:...2.00

Contact Hours:...3.00

Provides instruction in patient care with an emphasis on physical therapy interventions. Covers massage, body mechanics, bed mobility and positioning, PROM exercise, transfers, gait training, patient and family education, and the use of wheelchairs and assistive devices. Guided laboratory setting.

Prerequisites:.....................................Admission to the PTA Program

PTA-118: Exercise Techniques I   HS

Credit Hours:...2.00

Contact Hours:...2.00

Provides instruction in therapeutic exercise procedures utilized by physical therapist assistants. Topics include assessment of joint motion and muscle strength, implications of ROM and muscle testing for exercise prescription, types of exercise, basic exercise programs, and the use of exercise equipment. Theory only-no lab activities.

Prerequisites:...PTA 102, 110, 132, and 168

PTA-122: Exercise Techniques Lab   HS

Credit Hours:...2.00

Contact Hours:...4.00

Provides the opportunity for application of the techniques learned in PTA 118. Focuses on therapeutic exercise procedures utilized by physical therapist assistants as well as assessment of joint motion and muscle strength, implications of ROM and muscle testing for exercise prescription, types of exercise, basic exercise programs, and the use of exercise equipment. Guided lab setting.

Prerequisites:...PTA 102, 110, 132, and 168

PTA-132: Kinesiology for PTAs   HS

Credit Hours:...3.00

Contact Hours:...4.50

Reviews surface anatomy and functional anatomy, muscles and muscle function, proper posture and analysis of posture, and gait analysis and deviations. Medical Terminology is reinforced. A lab component familiarizes the student with functional aspects of human motion.

Prerequisites:...Admission to PTA Program

PTA-144: Physical Therapy Modalities   HS

Credit Hours:...2.00

Contact Hours:...3.00

Covers the principles, indications, contraindications, and precautions of physical agents including heat, cold, water, electrical stimulation, traction, light, and sound. Guided laboratory setting.

Prerequisites:..............PHYS 133, PTA 102, PTA 110, PTA 132, and PTA 168

Courses

BCT	Business and Computer Technology Division	**IT**	Industrial Technology Division
C	Credit for Prior College-level Learning	**HS**	Health Sciences Division
COM	Communications Division	**MS**	Math and Science Division
COU	Counseling Division	**SSAF**	Social Science, Arts, and Fitness Division

PTA-168: Development Across the Lifespan for PTAs   HS

Credit Hours:...3.00

Contact Hours:...3.00

Examines the normal gross motor development of humans from infancy on. Relates early developmental sequence and reflexive maturation to rehabilitation techniques utilized with adult patients. Discusses the development of adults, the aging process, and death and dying. Psychosocial and cognitive issues throughout the life span are integrated in human development.

Prerequisites:.. Admission into the PTA Program

PTA-225: Applied Pathology for PTAs   HS

Credit Hours:...4.00

Contact Hours:...4.00

Examines the signs, symptoms, etiology, course, prognosis, medical intervention, and treatment of diseases with an emphasis on diseases commonly encountered in physical therapy. Medical Terminology will be reinforced. Also highlights patient care with emphasis on physical therapy interventions relevant to the body system involved in various pathologies. Topics include aseptic technique and wound care, cardiac rehab and chest PT, and selected manual therapy techniques. Guided lab setting.

Prerequisites:..................BIO 234, PTA 102, PTA 110, PTA 168, and PTA 132

PTA-250: Extremity Orthopedics   HS

Credit Hours:...4.00

Contact Hours:...4.00

Presents the etiology, course, prognosis, medical intervention, and treatment of orthopedic conditions of the extremities. Includes physical therapy intervention. Guided lab setting.

Prerequisites:..PTA 118, 122, 144, and 225

PTA-254: Spinal Orthopedics   HS

Credit Hours:...3.00

Contact Hours:...3.00

Presents the etiology, course, prognosis, medical intervention, and treatment of orthopedic conditions of the spine. Covers physical therapy intervention. Guided lab setting.

Prerequisites:..PTA 118, 122, 144, and 225

PTA-262: Rehabilitation of Neurological Conditions I   HS

Credit Hours:...2.00

Contact Hours:...2.00

Reviews basic neuroanatomy and neurophysiology followed by instruction in the theory and rationale of the treatment approach for the patient with neurological involvement. Emphasizes the functional approach to patient treatment including use of Neurodevelopmental Treatment (NDT) and Proprioceptive Neuromuscular Facilitation (PNF)

for adults with neurological conditions such as traumatic brain injury and cerebrovascular accidents.

Prerequisites:..PTA 118, 122, 144, and 225

PTA-265: Rehab of Neurological Conditions Lab   HS

Credit Hours:...2.00

Contact Hours:...3.87

Applies techniques learned in PTA 262 with an emphasis on the functional approach to patient treatment. Includes the use of Neurodevelopmental Treatment (NDT) and Proprioceptive Neuromuscular Facilitation (PNF) for adults with neurological conditions such as traumatic brain injury and cerebrovascular accidents. Guided laboratory setting.

Prerequisites:..PTA 144, PTA 118, PTA 122, PTA 225

PTA-270: Physical Therapist Assistant Seminar   HS

Credit Hours:...1.00

Contact Hours:...1.00

Integrates classroom and clinical experiences in order to review and reinforce clinical skills, medical terminology, and effective communication skills.

Prerequisites:... PTA 250, 254, 262, 264, and 291

PTA-291: Clinical Externship I   HS

Credit Hours:...2.00

Contact Hours:...8.00

A part-time, supervised clinical practicum at affiliated physical therapy departments. Students participate in patient treatment under the delegation and supervision of a licensed physical therapist. Students begin to integrate information from all previous course work to assist in those delegated components of patient care.

Prerequisites:... PTA 118, PTA 122, 144, PTA 225

PTA-295: Clinical Externship II   HS

Credit Hours:...9.00

Contact Hours:... 37.20

A full-time supervised clinical practicum at affiliated physical therapy departments. Students participate in patient treatment under the delegation and supervision of a licensed physical therapist. Students integrate classroom knowledge and laboratory experience to achieve the competencies of an entry-level physical therapist assistant as outlined by the American Physical Therapy Association (APTA).

Prerequisites:... PTA 250, 254, 262, 264, and 291

BCT Business and Computer Technology Division
C   Credit for Prior College-level Learning
COM Communications Division
COU Counseling Division

IT   Industrial Technology Division
HS   Health Sciences Division
MS   Math and Science Division
SSAF Social Science, Arts, and Fitness Division

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Courses

RAD-101: Introduction to Radiography   HS

Credit Hours:..1.00

Contact Hours:...0.93

This lecture course will provide the student with an overview of radiography and its role within the health care delivery system. A radiographer's responsibilities will be outlined. Students will be oriented to academic and administrative structures, key departments and personnel in diagnostic imaging and to the profession as a whole. Basic x-ray equipment design and types of diagnostic imaging examinations performed will be introduced.

Prerequisites:...................................Acceptance into Radiographer Program.

RAD-109: Clinical Education I   HS

Credit Hours:..3.00

Contact Hours:.. 23.87

This is an introductory, structured, competency based clinical course designed in concert with ASRT curriculum and ARRT competencies. Course offers experiences in chart recognition, basic patient assessment, patient communication, and basic departmental procedures and policies. Equipment manipulation, chest, abdomen, and upper extremity radiographic positioning are emphasized.

Prerequisites:...................................Acceptance into Radiographer Program

RAD-111: Principles of Radiation Protection   HS

Credit Hours:..2.00

Contact Hours:...2.00

This course provides the student with an overview of the principles of radiation protection including responsibilities of the radiographer to patients, personnel, and the public. The concepts of As Low as Reasonably Achievable, stochastic and nonstochastic effects, and occupational effective dose limits are addressed. Regulatory agencies will be identified and their involvement in radiation protection will be discussed.

Prerequisites:...................................Acceptance into Radiographer Program.

RAD-114: Basic Patient Care in Radiography   HS

Credit Hours:..3.00

Contact Hours:...3.00

This course is designed to introduce the basic concepts of patient care including patient interactions, body mechanics, patient transfer techniques, vital signs, infection control, emergency situations, age specific care, oxygen administration, basic pharmacology and venipuncture.

Prerequisites:...................................Acceptance into Radiographer Program

RAD-118: Radiographic Positioning   HS

Credit Hours:..3.00

Contact Hours:...4.00

This lecture/laboratory course is one of a five course curriculum in radiographic positioning and procedures. This course introduces fundamental radiology positioning terminology and provides instruction in standard imaging procedures for chest, abdomen, and upper extremity. Positioning skills will be practiced and reinforced through laboratory assignments. Consideration is given to the evaluation of optimal diagnostic images.

Prerequisites:...................................Acceptance into Radiographer Program

RAD-158: Radiographic Positioning II   HS

Credit Hours:..3.00

Contact Hours:...4.00

This lecture/laboratory course is one of a five course curriculum in radiographic positioning and procedures. This course provides instruction in standard imaging procedures for shoulder girdle, lower extremity, and pelvic girdle. Positioning skills will be practiced and reinforced through laboratory assignments. Consideration is given to the evaluation of optimal diagnostic images.

Prerequisites:...........RAD 101, RAD 109, RAD 111, RAD 114, and RAD 118

RAD-161: Imaging Equipment   HS

Credit Hours:..1.00

Contact Hours:...0.93

This course focuses upon the equipment routinely utilized to produce diagnostic images. The major emphasis will be on the construction and operation of the diagnostic x-ray tube, digital imaging systems, and fluoroscopic imaging systems. Basic principles of advanced imaging equipment such as CT and MRI are introduced.

Prerequisites:...........RAD 101, RAD 109, RAD 111, RAD 114, and RAD 118

RAD-171: Principles of Exposure   HS

Credit Hours:..3.00

Contact Hours:...3.00

This lecture/lab course focuses upon the factors that govern and influence the production of quality radiographic images. The course details the main properties of radiographic density/brightness, contrast, recorded detail/spatial resolution and distortion. Exposure calculations will be introduced.

Prerequisites:............RAD 101, RAD 109, RAD 111, RAD 114 and RAD 118

RAD-181: Contrast Studies   HS

Credit Hours:..1.00

Contact Hours:...0.93

This course is one in a series of five courses in radiographic positioning and procedures. The course provides instruction in standard imaging procedures for contrast studies of the digestive and the genitourinary tracts. Consideration is given to special radiographic contrast studies. Consideration is also given to the evaluation of optimal diagnostic images.

Prerequisites:............RAD 101, RAD 109, RAD 111, RAD 114 and RAD 118

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RAD-190: Clinical Education II `HS`

Credit Hours:..3.00

Contact Hours:.. 23.87

This is second in a sequence of structured, competency based clinical courses in concert with ASRT curriculum and ASRT competencies. Course offers experiences in chart recognition, basic patient assessment, patient communication, and basic departmental procedures and policies. Equipment manipulation, chest, abdomen, upper extremity, lower extremity and shoulder girdle radiographic positioning are emphasized.

Prerequisites:..RAD 109

RAD-195: Basic Clinical Education `HS`

Credit Hours:..1.50

Contact Hours:.. 11.07

A third course in a sequence of structured, competency based, clinical courses offering experiences in chart recognition, patient assessment, patient communication, equipment manipulation, and chest, abdomen, lower extremity, upper extremity, shoulder, and pelvis radiographic positioning.

Prerequisites:..RAD 190

RAD-209: Intermediate Clinical Education `HS`

Credit Hours:..3.00

Contact Hours:.. 23.87

This is fourth in a sequence of structured, competency based clinical courses in concert with ASRT curriculum and ARRT competencies. Course emphasizes on increasing technical proficiency in all previously covered radiographic procedures and introduces skull, facial bones, nasal bones, and sinuses. Experience in pediatric radiography is offered.

Prerequisites:..RAD 198

RAD-214: Pathology and Cross Sectional Anatomy `HS`

Credit Hours:..2.00

Contact Hours:..2.00

This course is designed to introduce concepts related to disease and etiological considerations with emphasis on radiographic appearance of disease and impact on exposure factor selection. The course is designed to establish a knowledge base in basic cross sectional anatomy of head, neck, thorax, and abdomen.

Prerequisites:..RAD 188

RAD-228: Radiographic Procedures `HS`

Credit Hours:..3.00

Contact Hours:..4.00

This lecture/laboratory course is one of a four course curriculum in radiographic positioning and procedures. Course provides instruction in standard imaging procedures for the vertebral column, bony thorax, skull, facial bones, and sinuses. Positioning skills will be practiced and reinforced through laboratory assignments. Consideration is given to the evaluation of optimal diagnostic images.

Prerequisites:..RAD 158

RAD-267: Radiation Physics `HS`

Credit Hours:..4.00

Contact Hours:..4.00

This lecture course focuses upon fundamental physics for radiologic technology including electrostatics, electrodynamics, electromagnetic induction, fundamentals of x-ray generating equipment, x-ray production, and beam characteristics. X-ray photon interactions with matter will be reviewed.

Prerequisites:.............................. RAD 111, RAD 161, RAD 171 and RAD 198

RAD-270: Image Acquisition and Display `HS`

Credit Hours:..3.00

Contact Hours:..3.00

This course imparts a historical overview of the film-screen image production process. This course imparts an understanding of the components, principles, and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving, and retrieval are discussed. Principles of digital system quality assurance and maintenance are presented.

Prerequisites:..RAD 171

RAD-274: Principles of Radiation Biology `HS`

Credit Hours:..2.00

Contact Hours:..2.00

This lecture course provides an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues, and the body as a whole are presented. Factors affecting biological response to radiation exposure are presented, including acute and chronic effects.

Prerequisites:.. RAD 214, RAD 227,and RAD 267

RAD-284: Principles of Computed Tomography `HS`

Credit Hours:..1.00

Contact Hours:..0.93

This online course provides entry level radiography students with principles related to computed tomography (CT) imaging.

Prerequisites:..........RAD 101, RAD 109, RAD 111, RAD 114, and RAD 118

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RAD-286: Registry Review `HS`

Credit Hours:...2.00

Contact Hours:...2.00

This course provides a comprehensive review designed to prepare radiologic technology students for the American Registry of Radiologic Technologists (ARRT) certification examination. An orderly review based on the ARRT radiography content specifications is presented. Test preparation and test-taking strategies are also discussed.

Prerequisites:..All previous RAD program courses

RAD-290: Advanced Clinical Education `HS`

Credit Hours:...3.00

Contact Hours:... 23.87

This is fifth in a sequence of structured, competency based clinical courses in concert with ASRT curriculum and ARRT competencies. Course emphasizes on headwork including skull, facial bones, paranasal sinuses, and increasing technical proficiency in all previously covered radiographic procedures. Students will continue to develop trauma radiography skills and advanced mobile radiography skills.

Prerequisites:...RAD 209

RAD-296: Capstone Clinical Education `HS`

Credit Hours:... 1.50

Contact Hours:... 11.07

This is sixth in a sequence of structured, competency based clinical courses emphasizing final mastery of all aspects of professional, entry level radiologic technology. Structured clinical experiences are offered in selected specialty rotations which may include Ultrasound, Computed Tomography, Magnetic Resonance Imaging, Radiation Therapy, Mammography, and Positron Emission Tomography.

Prerequisites:...RAD 290

REEN-101: Survey of Renewable Energy Sources `IT`

Credit Hours:...2.00

Contact Hours:...2.00

Examines renewable energy sources that are available today and explores sources which are predicted to become available in the near future. Topics include solar and photovoltaic systems, geothermal systems, wind systems, energy from bio-mass, and fuel cell systems. Explains how these systems function technically and discusses how they will affect the environment and the economy. Includes laboratory activities and performance exercises.

Prerequisites:.. None

REEN-110: Geothermal Systems and Water Furnace Technology `IT`

Credit Hours:...2.00

Contact Hours:...2.00

Introduces the topic of geothermal energy, identifies geothermal energy sources, and provides an overview of how geothermal energy is used. Emphasizes residential heating using ground source heat pump technology. Covers the installation of a geothermal furnace in a residential application including an initial survey of the home and property, sizing of the unit, and the choice of the type of loop system to use. Also covers installation and maintenance of a geothermal heating system. Access to a working water furnace system and to on campus geothermal wells is available for laboratory activities.

Prerequisites:.. None

REEN-120: Wind, Solar, and Fuel Cell Technology `IT`

Credit Hours:...2.00

Contact Hours:...2.00

Explores the theory of operation and the practical applications of solar thermal, solar photovoltaic, wind turbine, and fuel cell technologies. Discusses the benefits and drawbacks of alternative energy installations, the technical components of each system, and accommodating siting requirements for each type of installation. Principles of energy conversion, energy efficiency, and energy storage are also addressed.

Prerequisites:.. None

REEN-130: Smart Home Control Technology `IT`

Credit Hours:...2.00

Contact Hours:...2.00

Examines both the advantages and the drawbacks of using smart home technology. Explores all of the options currently available in the different types of systems and technologies.   Topics discussed include the economics of smart home technology, smart home technology and conservation of energy, and how smart home technology can improve standards of living. Demonstrations of the technology and laboratory exercises are included.

Prerequisites:.. None

REEN-140: Cogeneration and Backup Power `IT`

Credit Hours:...2.00

Contact Hours:...2.00

Introduces the topics of cogeneration and backup power for use in a residence or business. Explores the various types of both backup power units and uninterruptible power units available today. Addresses site survey, planning, cost, and the installation and maintenance of the units.

Prerequisites:.. None

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REEN-160: Energy Auditing/Weatherization   IT

Credit Hours:...3.00

Contact Hours:...3.00

For students seeking to become BPI certified residential energy auditors or to understand the principles of energy auditing. Includes training in the principles of energy transfer, building envelopes, energy auditing, air leakage, insulation, windows and doors, heating systems, cooling systems, indoor air quality, lighting, appliances, and water heating. Students will gain the skills required to perform building inspections and make cost effective recommendations for improving energy efficiency. At the conclusion of this class students will be able to sit for the Building Performance Institute (BPI) theory written test for Building Analyst certification. REEN 161 is the next class for BPI preparation and field certification class. The candidate must pass the REEN 160 class (first twelve weeks of one semester) and BPI written theory test to proceed to REEN 161 (last four weeks of the same semester). Recommend co-requisite of REEN 161.

Prerequisites:.. None

REEN-161: Energy Auditing/Weatherization Certification Lab   IT

Credit Hours:...1.00

Contact Hours:...0.93

This certification lab class allows students to apply in the field the concepts introduced in REEN 160. Discusses industry-defined standards, basic energy efficiency improvements, how to evaluat energy consumption, and how to calculate energy costs. Other topics include how to use industry tools to measure energy consumption in residential settings and preparation for the Building Performance Institute (BPI) Building Analyst field exam. Along with a written exam, a field exam enables students to complete the BPI certification process. It is strongly recommended that a student pass REEN 160 and the BPI written theory test before taking REEN 161.

Prerequisites:..REEN 160

REEN-170: Battery Technologies   IT

Credit Hours:...3.00

Contact Hours:...3.00

Covers the development of battery technology over the years. Focuses on applications of emerging technology. Topics include, but are not limited to, battery construction, cell characteristics, electric data, energy density, capacity retention, and cycle life of batteries. Also includes fundamental formulations and design aspects in secondary batteries used in electric propulsion. Provides overview of battery technology including acid, nickel metal hydride, and lithium ion cells with their applications for use in hybrid and electric vehicles. Discusses how to evaluate storage battery technologies, simple voltaic cells with aqueous electrolytes, primary non-rechargeable batteries, and secondary rechargeable batteries. Course work examines developments in stationary and new propulsion systems for hybrid, plug-in hybrid, and electric vehicles.

Prerequisites:.. None

REEN-180: Hydropower   IT

Credit Hours:...2.00

Contact Hours:...2.00

Examines hydropower as a major component of the world renewable energy mix. Provides a comprehensive overview of the technical application and social, economic, and environmental implications of hydropower as a method of energy generation. Topics include hydropower plant types, development of new hydropower facilities, retrofitting obsolete power stations, and the role of small scale hydropower.

Prerequisites:.. None

RTH-100: Principles of Respiratory Care   HS

Credit Hours:...3.00

Contact Hours:...3.00

An in-depth study of the cardiopulmonary system from fetal development through old age in health and disease. Topics include Respiratory Care history, cardiopulmonary anatomy and physiology, the effects of aging on the pulmonary system, basic pulmonary assessment and an introduction to basic pulmonary diseases

Prerequisites:.................. Admission to the Respiratory Therapist Program

RTH-125: Respiratory Care Procedures I   HS

Credit Hours:...5.00

Contact Hours:...5.00

This course provides instruction in beginning therapeutic procedures utilized by the respiratory therapist. Course content includes basic patient and pulmonary assessment, pulse oximetry, basic gas laws, medical gas administration, oxygen therapy delivery systems, and lung expansion techniques. Students practice these procedures in a guided laboratory setting. Course includes 2 hours of lecture and 3 hours of lab each week.

Prerequisites:.................. Admission to the Respiratory Therapist Program

RTH-160: Respiratory Therapy Pharmacology   HS

Credit Hours:...2.00

Contact Hours:...2.00

This course focuses on the appropriate and effective administration of respiratory care medications, including an overview of pharmacology, terminology, routes, techniques of administration, and calculation of dosages. The NAEPP Guidelines for Asthma Management are emphasized.

Prerequisites:.........................RTH 100 and RTH 125 both with a C or better

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RTH-175: Respiratory Care Procedures II   HS

Credit Hours:..5.00

Contact Hours:...5.00

This course provides instruction in therapeutic procedures utilized by the respiratory therapist. Course content includes airway care, emergency life support, bronchial hygiene therapy, and lung expansion therapy. Students practice these procedures in a guided laboratory setting. Course includes 3 hours of lecture and 2 hours of lab each week.

Prerequisites: ....RTH 100 and RTH 125 both with a C or better

RTH-180: RT Clinical Sciences   HS

Credit Hours:..3.00

Contact Hours:...3.00

This course focuses on the clinical application of science to the practice of respiratory care. Topics include oxygenation, acid-base balance, ventilation in health and disease, basic microbiology, common microbial pathogens seen with pulmonary infection and the physical principles of spontaneous and mechanical ventilation. Emphasis is placed on blood gas interpretation, capnography, arterial puncture techniques, and disinfection and sterilization of respiratory care equipment.

Prerequisites: ....RTH 100 and RTH 125 both with a C or better

RTH-195: Introduction to Clinical Therapeutics   HS

Credit Hours:..1.50

Contact Hours:...3.73

Selected experience in health care facilities for clinical practice with oxygen delivery systems and basic patient assessment techniques.

Prerequisites: ...... RTH 100 and RTH 125 both with a grade of C or better

RTH-210: Ventilator Management I   HS

Credit Hours:..4.00

Contact Hours:...3.87

A study of the theories, techniques, and equipment involved in the initiation, maintenance, and discontinuation of mechanical ventilation in the adult patient. Laboratory experiences with a variety of adult mechanical ventilators.

Prerequisites: ....RTH 160, RTH 175, RTH 195 all with a C or better

RTH-220: Respiratory Care in Neonates and Pediatrics   HS

Credit Hours:..1.50

Contact Hours:...1.47

Introduces the principles of respiratory care for the neonatal or pediatric patient with cardiopulmonary disease or abnormalities. Covers anatomy, physiology, pathophysiology, and assessment of the neonatal and pediatric patient with cardiopulmonary abnormalities and diseases. Offered as an eight-week course.

Prerequisites: ....RTH 210 and RTH 293 both with a C grade or better

RTH-240: Cardiopulmonary Diagnostics   HS

Credit Hours:..1.50

Contact Hours:...1.47

This course discusses basic pulmonary function testing and electrocardiographic testing. Basic theory and techniques for testing are covered. Students are expected to perform and evaluate these tests for use by the physician. This course is offered as an eight-week course.

Prerequisites: ....BIO 234 with a grade of C or better, and approval from the Program Director

RTH-250: Advanced Mechanical Ventilation   HS

Credit Hours:..4.00

Contact Hours:...6.27

Emphasizes the assessment and management of respiratory care patients. Students apply techniques and concepts to treat patients with disease states seen in the critical care areas. This lecture/lab course includes advanced mechanical ventilatory techniques for premature neonates through adults. Participants develop treatment plans utilizing patient-driven protocols.

Prerequisites: ....RTH 210 and RTH 293 both with a C grade or better

RTH-270: Therapeutic Clinical Management   HS

Credit Hours:..2.00

Contact Hours:...2.00

This course provides the student an opportunity to apply in simulated settings concepts learned throughout the respiratory therapist program. Students spend time working on computerized clinical case study simulations, selecting appropriate patient information, and managing patients

Prerequisites: ....RTH 220, RTH 240, RTH 250, and RTH 292 all with a grade of C or better

RTH-285: Advanced Respiratory Concepts   HS

Credit Hours:..3.00

Contact Hours:...3.00

A study of the current theory and techniques encountered by the respiratory therapist in a variety of clinical settings. Emphasis is placed on advanced ventilator applications, advanced cardiopulmonary monitoring, pulmonary rehabilitation, smoking cessation and the respiratory care professional's dynamic role in the health care setting.

Prerequisites: ....RTH 220, RTH 240, RTH 250, and RTH 292 with a C or better

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RTH-292: Clinical Practicum HS

Credit Hours:..5.00

Contact Hours:.. 15.87

Directed clinical experience that develops therapeutic clinical skills for critical care areas and diagnostic labs. Emphasis is on assessing needs, designing care plans, and implementing and evaluating the procedures especially for mechanical ventilator support and systemic oxygenation. Fifteen hours per week.

Prerequisites:.........................RTH 210 and RTH 293 both with a C or better

RTH-293: Advanced Clinical Therapy HS

Credit Hours:..3.00

Contact Hours:...9.47

Development of the clinical skills related to airway management, bronchial hygiene, resuscitation procedures, and oxygenation. Students evaluate, modify, and monitor patients' responses to respiratory care regimens. A seven-week directed clinical experience that includes 16 hours per week in selected clinical sites.

Prerequisites:............................. RTH 160, RTH 175, RTH 180, and RTH 195 - all courses with a grade of "C" or better.

RTH-294: Advanced Clinical Practicum HS

Credit Hours:..8.00

Contact Hours:.. 23.87

Directed clinical experience that further develops the clinical skills and techniques used to manage patients requiring mechanical ventilator support in the hospital, sub-acute and home care settings. Twenty-four hours per week.

Prerequisites:................................RTH 220, RTH 240, RTH 250, and RTH 292 all with a C or better

SCI-131: Revolutions in Science MS

Credit Hours:..3.00

Contact Hours:...3.00

Explores the development of modern Western science from its origins in the ancient world to the present day. Explores major scientific theories through the study of selected original writings in translation as well as modern commentaries.

Prerequisites:...Completion of ENG 081 or higher, or a test score that allows placement in ENG 131. A previous college-level science course is recommended.

SCI-160: Science Laboratory Workplace Skills MS

Credit Hours:..3.00

Contact Hours:...3.00

SCI 160 helps students gain skills required of laboratory science professionals in the workplace. Course topics include standard laboratory procedures and calculations, laboratory safety, communication skills, professional behavior and employment skills, laboratory record-keeping, quality control/quality assurance, regulatory issues, specimen handling and storage, and critical thinking and problem solving in the laboratory. It will also introduce students to the research and manufacturing facets of the laboratory science industry. This course is designed to satisfy the requirements of the Biotechnology Program. Three hours of integrated lecture and laboratory per week.

Prerequisites:....................................Completion of a college-level science course with a lab with a grade of C or better, & completion of MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH 080/089 (or higher) with a grade of C or better OR equivalent score on the math placement test

SCI-210: Introduction to Science for Elementary Educators MS

Credit Hours:..4.00

Contact Hours:...4.00

Introduces students to a broad overview of both science instruction and the process of science. Students will investigate, discuss and design experiments using the group inquiry method of instruction. This is the first science course in a sequence intended for pre-service elementary school education majors.

Prerequisites:... None

SCI-212: Earth Science for Educators MS

Credit Hours:..4.00

Contact Hours:...4.00

An inquiry-based course covering topics in the earth sciences - geology, meteorology, and astronomy. Course content is designed to give students a thorough familiarity with concepts critical to teaching earth science at the K-12 level. The course emphasizes three skills: investigation, critical thinking, and organization. Learning is primarily through student inquiry and discovery of core concepts, with guidance and facilitation provided by the instructor. Two combined classroom/lab sessions per week. SCI 210 is a recommended, but not required, pre-requisite.

Prerequisites:...................................... MATH-0891, MATH-0892, MATH-0893, AND MATH-0894 OR MATH 080

SCI-213: Learning by Inquiry: Life Science MS

Credit Hours:..4.00

Contact Hours:...4.00

Provides pre-service elementary and middle school teachers with the necessary tools, knowledge, and motivation to teach basic biological concepts. Topics include how to integrate major biological themes, and how the topics covered in the course fulfill the National Science Education Standards. At least one field trip is required. Students will use inquiry-based learning.

Prerequisites:... None

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SCI-292: Study Abroad in Natural Sciences `MS`

Credit Hours:..1.00

Contact Hours:..0.93

Explores the various aspects of the sciences and natural areas in a foreign country under the direction of a faculty member or members in the sciences. Prior to departure, students meet with the instructor(s) for basic cultural discussions and to choose an individual topic of research. While abroad, students study various aspects of the sciences and culture via the instructor and guides in the country, and conduct research on their individual topics. On their return, students reflect on their study abroad experience, develop their topic of special interest, and present it in the form of a paper, portfolio, or project. Specific travel information will be announced at least one semester prior to departure.

Prerequisites:...Instructor Permission

SCO-190: Co-op in Science `MS` `C`

Credit Hours:..1.00

Contact Hours:..4.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

Prerequisites: Permission from Career Services Officer or Job Developer in the Office of Career Services

SCO-290: Co-op in Science `MS` `C`

Credit Hours:..2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

Prerequisites:...................................Permission from Career Services Officer or Job Developer in the Office of Career Services

SOC-131: Introduction to Sociology `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the sociological approach to understanding culture and society. Examines human behavior in a group context, focusing on the prominent influence of culture and social structure on individuals. Connections between individuals and a variety of social institutions, such as the economy, government, and mass media, are examined and compared in U.S. society and on a global scale. Focuses on cultural diversity and social inequalities, such as those related to class, race, ethnicity and gender.

Prerequisites:..ENG-093 or ENG-094 Eligible

SOC-132: Marriage and the Family `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

Examines how to become more aware of the personal decisions one makes in life and of the cultural influences affecting decisions relating to family situations. Areas of discussion include definitions of marriage and the family, married partners as individuals, becoming partners, experiencing family commitment, changing commitments, and cross-cultural comparisons.

Prerequisites:...SOC-131

SOC-151: Contemporary Social Problems `SSAF`

Credit Hours:..3.00

Contact Hours:..3.00

Focuses on current social problems and issues facing American society. Students investigate a series of important problems, including poverty, urban decline, family instability, crime and discrimination, by using a sociological perspective. The primary goals of this course are increasing student awareness of the causes of social problems and investigating possible solutions.

Prerequisites:.. SOC 131

SOC-152: Women, Men, and Society `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

Discusses how to use a sociological approach to investigate sex-related issues, such as changing gender roles, sex discrimination, sexual harassment, homophobia, gender-related violence, reproductive rights, and child custody. Emphasizes how and why everyday experiences of women and men can differ significantly in such areas as employment, education, politics, law, medical care, sexuality, and domestic life.

Prerequisites:..ENG-093 or ENG-094 eligible

SOC-212: Leadership in Diverse Communities and Organizations `SSAF` `C`

Credit Hours:..3.00

Contact Hours:..3.00

This is a third course in community leadership, with an emphasis on leadership and team building, power mapping, and organizational development. Implementation in strategic methods, fund-raising, communication, and career exploration are emphasized. Focuses on preparation and research for the internship.

Prerequisites:..POLS 111 or permission of instructor

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SOC-251: Ethnic and Racial Diversity in Society   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the sociological study of ethnic and racial groups. Explores key concepts and issues in connection with definitions of race and ethnicity, immigration, patterns of group inequality and domination, discrimination, and prejudice. Focuses on the diversity of U.S. society and explores the experiences of Native Americans and immigrant groups, including those from Africa, Asia, and Europe. Examines current patterns and consequences of immigration as well as ethnic and racial diversity in other societies.

Prerequisites:.. SOC 131

SOC-253: Sociology of Deviance   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Explores how one becomes deviant, the social construction of deviant behavior, the impact of societal responses to deviance, and processes used to control deviant behavior. Offers a wide range of perspectives and theoretical formulations to explain the onset, persistence, and desistence of deviance. Also discusses both formal and informal responses to deviant behaviors including criminalization and stigmatization, and their cross-cultural variation. Additionally, course examines particular forms of deviance including homicide, domestic violence, mental illness, alcohol and drug abuse, sexual deviance, property and white collar/organized crimes.

Prerequisites:.. SOC 131

SOC-254: Social Psychology   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the social forces affecting people's lives and how people affect their group. Examines three areas of behavior resulting from intentional influence, membership in a group, and social interaction. Also explores self-perception, behavior and attitude, attraction, aggression, altruism, and group processes. May be taken for credit in either psychology or sociology but not both.

Prerequisites:......................PSY 131 and SOC 131 or Instructor permission

SOC-295: Community Leadership Internship   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

The Community Leadership Internship provides students with training opportunities with local community

organizations. Students engage directly with community organizations with experiences with data collection,

facilitating meetings, recruiting new members, fund raising, and project management.

Prerequisites:..SOC 102 or POLS 102

SPC-131: Fundamentals of Speaking   COM

Credit Hours:..3.00

Contact Hours:..3.00

Explores how to develop oral communication skills through practice in extemporaneous speaking.

Prerequisites:.. None

SPC-145: Interpersonal Communication   COM

Credit Hours:..3.00

Contact Hours:..3.00

Explores the process of communication between individuals in relatively informal, face-to-face situations that occur in family, social, and work groups.

Prerequisites:.. None

SPN-131: Elementary Spanish I   COM

Credit Hours:..4.00

Contact Hours:..4.00

Introduces the basic skills of reading, writing, speaking, and listening in Spanish within communicative contexts. Covers the elementary pronunciation and grammatical principles necessary for comprehending and expressing simple ideas in both spoken and written Spanish. Also presents Hispanic culture. Note: A "C-" grade is not transferrable and is not accepted by some programs at HFC.

Prerequisites:.. None

SPN-132: Elementary Spanish II   COM

Credit Hours:..4.00

Contact Hours:..4.00

SPN 132 further builds reading, writing, speaking, and listening skills in Spanish, focusing on communication in a cultural context. Students expand their knowledge of vocabulary, pronunciation and grammatical principles in order to comprehend and express everyday ideas in both spoken and written Spanish.

Prerequisites:..C grade or better in SPN 131 or in one year of high school Spanish, or instructor permission

SPN-141: Elementary Spanish Conversation   COM

Credit Hours:..3.00

Contact Hours:..3.00

Conducted almost entirely in Spanish and is designed for students wishing to expand their active vocabulary and improve their facility in speaking and listening. Class discussions are based on assigned readings, student reports, and current events. Course is transferable but is not a substitute for a basic language requirement. May be taken concurrently with Spanish 132, 231 or 232.

Prerequisites:.. A grade of C or better in SPN 131 or in one year of high school Spanish, or Instructor permission

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Courses

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SPN-231: Second-Year Spanish III   COM

Credit Hours:..4.00

Contact Hours:..4.00

SPN 231 follows SPN 132 and is the first of two intermediate-level Spanish courses focusing on communication in a cultural context. Students continue to develop their reading, writing, speaking, and listening skills in Spanish, expand their vocabulary, and deepen their knowledge of pronunciation and grammatical principles in order to comprehend and express essential ideas in both spoken and written Spanish.

Prerequisites:.. A grade of C or better in SPN 132 or in two years of high school Spanish, or instructor permission

SPN-232: Second-Year Spanish IV   COM

Credit Hours:..4.00

Contact Hours:..4.00

SPN 232 is the second of two intermediate-level Spanish courses focusing on communication in a cultural context. Students will further develop their reading, writing, speaking, and listening skills in Spanish, expand their vocabulary, and deepen their knowledge of pronunciation and grammatical principles in order to comprehend and express a wide range of ideas in both spoken and written Spanish.

Prerequisites:.. A grade of C or better in SPN 231 or in three years of high school Spanish, or permission of instructor

SPN-290: Study Abroad in Spanish Language and Culture   COM

Credit Hours:..3.00

Contact Hours:..3.00

SPN 290 takes students to study Spanish language and culture in a Spanish-speaking country under the direction of a member of the Communications Division faculty. Prior to departure, students meet with the instructor for basic language and cultural lessons and to choose an individual topic of research in the area of Spanish language, literature, or culture. While abroad, students put their knowledge of language and culture into practice. On their return, students reflect on their study abroad experience, develop their topic of special interest, and present it in the form of a paper, portfolio, or project. Specific travel information will be announced at least one semester prior to departure.

Prerequisites:............................A grade of C or better in SPN 131, 132, 231, or 232 or equivalent or Instructor permission (Note that a grade of C- is not transferrable and is not accepted by some programs at HFC.)

SPN-295: Directed Study in Spanish   COM

Credit Hours:..1.00

Contact Hours:..0.87

SPN 295 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Spanish language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:............................A grade of C or better in SPN 131, 132, 231, or 232 or equivalent

SPN-296: Directed Study in Spanish   COM

Credit Hours:..2.00

Contact Hours:..0.87

SPN 296 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Spanish language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.t

Prerequisites:............................A grade of C or better in SPN 131, 132, 231, or 232 or equivalent

SPN-297: Directed Study in Spanish   COM

Credit Hours:..3.00

Contact Hours:..0.87

SPN 297 offers advanced study under the direction of a Communications Division faculty member. This course may be taken only after consultation with the instructor to determine the course content (a topic of special interest in the area of Spanish language, literature, or culture) and the credit hours appropriate for the chosen project. This class may be repeated once for credit.

Prerequisites:............................A grade of C or better in SPN 131, 132, 231, or 232 or equivalent

SRG-101: Introduction to Surgical Technology   HS

Credit Hours:..4.00

Contact Hours:..4.00

The course introduces the fundamentals of operating room techniques, emphasizing principles and practices of asepsis and sterilization. Physical and psychosocial aspects of the patient are explored. Included are the roles and responsibilities of the surgical technologist and other surgical team members; accountability and legal aspects; identification of common equipment, instruments, and supplies; students practice scrubbing, gowning, and gloving. Selected laboratory practice and one OR observation required.

Prerequisites:..........................BIO 135 & Acceptance into the SRG Program

SRG-120: Surgical Procedures I   `HS`

Credit Hours:..4.00

Contact Hours:..4.00

A lecture/laboratory course designed to continue to develop the concepts from SRG 101. It features the theory and practice for general, gynecology, genitourinary, orthopedic, otorhinolaryngology, and endoscopy surgical procedures. The course also emphasizes the scheme or steps as well as the instrumentation of these surgical interventions. One or two half day OR observations are required.

Prerequisites:.. SRG 101, BIO 135, BIO 233, AH 100

SRG-140: Surgical Techniques I   `HS`

Credit Hours:..2.00

Contact Hours:..2.00

A laboratory course designed to develop basic aseptic and sterile techniques used in the perioperative care of the surgical patient. This course focuses on the surgical scrub, gowning and gloving, setting up a sterile field, draping, handling of surgical instruments, and surgical counts. Students practice techniques in a guided lab setting.

Prerequisites:...SRG 101, AH 100, BIO 135, BIO 233

SRG-150: Surgical Techniques II   `HS`

Credit Hours:..2.00

Contact Hours:..2.00

A laboratory course designed to prepare students for clinical externship. Students will continue to practice aseptic and sterile techniques used in the perioperative care of the surgical patient. This course focuses on skills developed in SRG 140 and incorporates "mock surgery" and advanced clinical skills in a lab setting. Students practice techniques in a guided lab setting.

Prerequisites:..SRG 140

SRG-160: Surgical Pharmacology   `HS`

Credit Hours:..3.00

Contact Hours:..3.00

A study of medications used in the operating room with an emphasis on the common drugs used in the surgical area. This course examines the administration, actions, interactions, side effects, and terminology of perioperative medications. Included are legal responsibilities of the surgical technologist and common calculations performed in a sterile field. The student must present two reports as well as complete a term paper.

Prerequisites:...SRG 101, BIO 233, BIO 135, AH 100

SRG-209: Surgical Externship I   `HS`

Credit Hours:..5.00

Contact Hours:.. 15.87

A clinical practicum further developing concepts presented in previous SRG courses. Students are assigned to an affiliate agency where they actively participate as members of the surgical team, developing skills necessary to "scrub" and assisting in "circulating" during surgical procedures under supervision. Sixteen hours per week.

Prerequisites:..SRG 150

SRG-220: Surgical Procedures II   `HS`

Credit Hours:..4.00

Contact Hours:..4.00

This course is designed to further develop the student's knowledge of the theory and practice of surgical procedures. Focuses in this segment are cardiovascular, thoracic, neurologic, oral, ophthalmic, plastic and reconstruction, pediatric, and geriatric surgical procedures.

Prerequisites:..SRG 150

SRG-240: Issues in Surgical Technology   `HS`

Credit Hours:..4.00

Contact Hours:..4.00

Students will identify and discuss advanced surgical procedures focusing upon trauma, transplants, major orthopedic procedures, and the basic principles in the application of robotics in surgery. Electrical elements/concerns in the operating room will be discussed. All-Hazard Preparation will be discussed. The course will also emphasize the elements of professional development including professional organizations, leadership, teamwork, certification and continuing education. Students will discuss the role of the AST and its impact upon careers in surgical technology. Employability skills will be reviewed and applied. Students will be introduced to techniques and exercises in preparation for the national Certified Surgical Technologist (CST) exam. Written and oral presentations by the students are key elements of this course. NOTE: All students will be required to sit for the NBSTSA - CST exam as part of this course.

Prerequisites:... SRG 220, SRG 209

SRG-290: Clinical Externship II   `HS`

Credit Hours:..8.00

Contact Hours:.. 23.87

A practicum that further develops clinical proficiency. Students are assigned to an affiliated agency where they practice skills related to surgical techniques and principles. They participate as members of the surgical team, developing skills necessary to "scrub" and assist in "circulating" during surgical procedures. Students scrub alone on some surgical procedures. Twenty-four hours per week.

Prerequisites:... SRG 209, SRG 220

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SSC-131: Survey of the Social Sciences   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Surveys the several disciplines found under the general heading of social sciences: Anthropology, Economics, Geography, Ecology and Demography, Psychology, Sociology, and Political Science. Also presents the development of each discipline and its important concepts.

Prerequisites:.. None

SSC-235: Topics in Social Science   SSAF

Credit Hours:..3.00

Contact Hours:..3.00

Provides special study about a topic in the Social Sciences. Course may be taken twice for credit, six hours maximum, but the topics must be different. Specific topics and any prerequisites are listed in the current semester's class schedule or may be obtained through the Social Science Division office.

Prerequisites:............................ENG 131 eligible and Instructor permission

SSCO-190: Co-op in Social Science   SSAF C

Credit Hours:.. 1.00

Contact Hours:..4.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:...................................Permission from Career Services Officer or Job Developer in the Office of Career Services

SSCO-290: Co-op in Social Sciences   SSAF C

Credit Hours:..2.00

Contact Hours:..9.87

Cooperative education is a structured method of combining classroom-based education with practical work experience. A cooperative education experience, commonly known as a "co-op," provides academic credit for structured employment experience. Work experience must be directly related to the student's declared major to be eligible.

To register for this course, a student must have completed 50% of core coursework, maintain an overall GPA of 2.0 and a program specific GPA of 2.5.

Prerequisites:...................................Permission from Career Services Officer or Job Developer in the Office of Career Services

TADV-060: Basic Skills for the Skilled Trades   IT

Credit Hours:..4.00

Contact Hours:..4.00

Provides a comprehensive review of mathematical and algebraic skills as well as knowledge of the industrial workplace in order to prepare the student for an employer-administered apprenticeship test. Includes reading comprehension, arithmetic comprehension, spatial relations, graphic arithmetic, and mechanical concepts.

Prerequisites:.. None

TADV-100: Basic Print Reading   IT

Credit Hours:..2.00

Contact Hours:..2.00

Discusses print reading fundamentals needed for presenting concepts and techniques to various segments of today's industry. Includes the alphabet (use) of lines; projection of various shapes and surfaces; presentation of hidden details; and methods, units of measurement, and techniques used for locating details in a variety of drawings.

Prerequisites:.. None

TADV-120: Introduction to Fabrication   IT C

Credit Hours:.. 1.00

Contact Hours:..1.07

Introduces the fundamentals of basic welding and fabrication. Explores the shop environment, basic print reading, basic welding, and basic fabrication functions necessary for entry-level positions in either manufacturing or manufacturing maintenance positions. Projects include fabricating and assembling a welded project during the three 6-hour sessions.

Prerequisites:.. None

TADV-122: Introduction to Material Handling   IT C

Credit Hours:.. 1.00

Contact Hours:..0.93

Introduces industrial and manufacturing material handling. Covers how to assemble a complete and operational conveyor during the three 6-hour sessions.

Prerequisites:.. None

TADV-123: Introduction to Industrial Electrical   IT C

Credit Hours:.. 1.00

Contact Hours:..1.07

Explores industrial applications of electrical circuits, components, tools, and concepts to help prepare students for entry-level positions in manufacturing or manufacturing maintenance positions. Examines how to build basic industrial circuits and perform tests to understand basic electrical function and limits during the three 6-hour sessions.

Prerequisites:.. None

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TADV-124: Introduction to Industrial Controls   IT C

Credit Hours:..1.00

Contact Hours:..1.07

Introduces machine control using relay logic which is a necessary skill for entry-level positions in either manufacturing or manufacturing maintenance positions. Examines the basics in electrical control hardware, electrical drawings, and control logic. Students must perform basic PLC-related functions during class sessions.

Prerequisites:...TADV 123 or TAE Apprentice Coordinator/Instructor permission

TADV-125: Introduction to Integrated Manufacturing   IT C

Credit Hours:..1.00

Contact Hours:..0.93

Introduces integrated manufacturing systems. Presents the technology associated with a complex integrated manufacturing system through working with the SMC-FMS-200. Discusses manufacturing processes of feeding, handling, verification, and loading operations.

Prerequisites:.. None

TADV-181: Topics in Skilled Trades   IT

Credit Hours:..1.00

Contact Hours:..1.07

Provides specialized training and education in specific topics and concepts identified as relative to current maintenance issues. The precise topic or topics offered is identified by the Skilled Trades Apprenticeship Division faculty, STAD Steering Committee, employers with students enrolled in the STAD program, and/or other employers or individuals who have recognized a need for training. Course may be repeated for credit when different topics are offered.

Prerequisites:...Division approval

TADV-182: Special Topics in Skilled Trades   IT

Credit Hours:..2.00

Contact Hours:..2.00

Provides specialized training and education in specific topics and concepts identified as relative to current maintenance issues. The precise topic or topics offered is identified by the Skilled Trades Apprenticeship Division faculty, STAD Steering Committee, employers with students enrolled in the STAD program, and/or other employers or individuals who have recognized a need for training. Course may be repeated for credit when different topics are offered.

Prerequisites:...Division approval

TADV-283: Advanced Topics in Skilled Trades   IT

Credit Hours:..3.00

Contact Hours:..3.00

Provide the skilled trades community the opportunity to receive advanced specialized training and education in specific topics and concepts identified as relative to current maintenance issues. The precise topic or topics will be offered as identified by the Skilled Trades & Apprenticeship Division faculty, ST&AD Steering Committee, employers with students enrolled in the ST&AD program, and/or other employers or individuals who have recognized a need for training. Learners may repeat the course for credit when different topics are offered.

Prerequisites:...Division approval

TAEL-103: DC and AC Electricity   IT

Credit Hours:..4.00

Contact Hours:..4.00

Introduces DC and AC electrical theory, including electrical definitions, units of electrical measure, series and parallel resistive circuits, capacitance, inductance, AC voltage measurements, and AC calculations. Explores usage of meters and/or oscilloscopes.

Prerequisites:.. None

TAEL-105: AC Theory and Equipment   IT

Credit Hours:..4.00

Contact Hours:..4.00

Examines alternating current theory. Includes right triangle trigonometry and complex numbers to facilitate the AC calculations. Discusses concepts of reactance, impedance, and power factor. Compares single phase and three phase power. Introduces single phase and three phase alternators, motors, transformers, and both heating and lighting loads.

Prerequisites:..TAEL 103 or TAE Apprentice Coordinator/Instructor permission

TAEL-106: Electronics Theory   IT

Credit Hours:..4.00

Contact Hours:..4.00

Stresses the fundamental theories of electronic components and elementary semi-conductor circuit applications. Covers power supplies, amplifiers, oscillators, and semi-conductor controls. Includes use of test equipment, including oscilloscopes and meters.

Prerequisites:..TAEL 103 or TAE Apprentice Coordinator/Instructor permission

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TAEL-115: Digital Theory `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers digital theory. Introduces basic gates and logic circuits, counters, registers, timers, LED and LCD displays, arithmetic circuits, and number systems. Laboratory activities.

Prerequisites:... TAEL 103 or TAE Apprentice Coordinator/Instructor permission

TAEL-145: DC and AC Motors `IT`

Credit Hours:..4.00

Contact Hours:..4.00

Covers DC and AC motor fundamentals. Includes DC generators; series, shunt, and compound DC motors; single-phase and three-phase AC induction motors; and synchronous, wound rotor, and universal motors. Compares AC alternators to DC generators.

Prerequisites:... TAEL 105 or TAE Apprentice Coordinator/Instructor permission

TAEL-150: DC Motors and Controls `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the theory of operation for DC motors and generators. Covers DC motor starters and control circuits. Laboratory activities.

Prerequisites:... TAEL 103 or TAE Apprentice Coordinator/Instructor permission

TAEL-200: Ladder Diagrams and Motor Controls `IT`

Credit Hours:..4.00

Contact Hours:..4.00

Discusses the fundamentals of electrical ladder diagrams and motor control circuits. Covers ladder logic, labels, documentation, symbology of electrical drawings, and the use of ladder diagrams for troubleshooting. Examines several single phase control circuits, and explores how to design and draw control circuits for three-phase induction motors.

Prerequisites:... TAEL 145 or TAE Apprentice Coordinator/Instructor permission

TAEL-205: Industrial Electronic Controls `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Offers overview of industrial electronic circuits, and electronic and electrical sensor circuits. Reviews semiconductor and digital theory, troubleshooting techniques, and electronic components including transistors, diodes, SCR=s, DIAC=s, TRIAC=s, and various IC=s. Discusses three-phase and switching power supplies, DC motor drives, AC variable frequency motor drives, resistance welding controllers, and several types of industrial instrumentation circuits.

Prerequisites:... TAEL 106 or TAE Apprentice Coordinator/Instructor permission

TAEL-245: Programmable Logic Controller (PLC) `IT`

Credit Hours:..4.00

Contact Hours:..4.00

Discusses Allen Bradley PLC-5/25 programmable controller system characteristics. Covers how to use the programmable controller to solve the automated control problem and how to adapt to any PLC system, regardless of the manufacturer. Major course work involves writing several PLC programs and then successfully executing the programs in a laboratory setting.

Prerequisites:... TAEL 200 or TAE Apprentice Coordinator/Instructor permission

TAEL-260: Automation Controls and Robotics `IT`

Credit Hours:..4.00

Contact Hours:..4.00

An advanced-level course on the programmable controller. Discusses techniques, terminology, and documentation currently used in automated manufacturing. Emphasizes how to write control specifications for laboratory automation machines and industrial robots which are then used to implement controls for non-synchronous and synchronous operation of the machines.

Prerequisites:... TAEL 245 or TAE Apprentice Coordinator/Instructor permission

TAEL-265: National Electrical Code `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers how to apply the National Electrical Code as it relates to the electrician. Includes the design of electrical power systems and the factors relating to a safe and reliable installation as required by the code.

Prerequisites:.. None

TAEL-273: Fire Alarm Systems for Electricians `IT`

Credit Hours:..1.00

Contact Hours:..0.93

Provides an overview of fire alarm systems. Reviews fire alarm system requirements from the International Building Code and the National Fire Protection Association (NFPA) 72 Standard for fire alarm and signaling systems. Discusses the basics of detection, notification, suppression, and cabling requirements for residential and commercial applications.

Prerequisites:.. None

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TAEL-275: Residential Wiring `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explores the fundamentals of residential wiring, especially the aspects of the National Electrical Code specifically applying to residential construction and repairs. Covers electrical supplies and hardware appropriate for residential applications, and examines residential wiring techniques.

Prerequisites: .... None

TAEL-276: Commercial Wiring `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers the fundamentals of commercial wiring, especially the aspects of the National Electrical Code that specifically apply to commercial construction and repairs. Discusses electrical supplies, hardware appropriate for commercial applications, and commercial wiring techniques.

Prerequisites: .... None

TAEL-277: Industrial Wiring `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the fundamentals and techniques of industrial wiring. Emphasizes aspects of the National Electrical Code specifically applying to industrial applications and repairs. Includes electrical supplies and hardware appropriate for industrial applications.

Prerequisites: .... None

TAEL-279: Electrical Codes and Practices `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces National Electric Code (NEC) requirements. Covers application of the NEC, requirements for circuit and equipment protection, grounding basics, permitted wiring methods, motor and transformer protection, and installation requirements for special equipment and occupancies.

Prerequisites: .... None

TAEL-280: Low Voltage and Communication Wiring `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers installation and maintenance of signal/low voltage wiring and signal transmission, including PC board, and fiber optic repair and maintenance. Cover troubleshooting, installation procedures, and repair techniques in a lab setting. Emphasizes safety procedures and protocols.

Prerequisites:...TAEL 105 or TAE Apprentice Coordinator/Instructor permission

TAEL-285: Industrial Truck Controls `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explains the operation of SCR solid state truck controls to industrial truck apprentices. Reviews electrical theory, DC generators and motors, batteries and battery chargers, silicon controlled rectifier theory, SCR truck control operation, and troubleshooting techniques.

Prerequisites:...TAEL 103 or TAE Apprentice Coordinator/Instructor permission

TAEL-290: High Voltage Power Distribution `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers the generation, transmission, and distribution of primary electrical power. Includes underground and overhead distribution systems, types of wire and cables, switching equipment, protective devices, test equipment, personal safety items, OSHA safety rules, and methods of providing protection when working on de-energized electrical equipment.

Prerequisites:...TAEL 103 or TAE Apprentice Coordinator/Instructor permission

TAEL-291: Electrical Power Distribution and Transmission `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers the fundamentals of electrical power distribution, including substation and transmission line protection as well as construction. Also examines transmission lines, operation of distribution transformers, instrument transformers, circuit breakers, reclosers, sectionalizers, fuses, relays, and disconnects.

Prerequisites: .... None

TAEL-295: Microprocessors `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers the fundamentals of microprocessor circuits and microprocessor programming, including interfacing the microprocessor with the outside world through the handling of input and output data with a Peripheral Interface Adapter (PIA).

Prerequisites:...TAEL 115 or TAE Apprentice Coordinator/Instructor permission

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TAFD-117: Industrial Computer Applications `IT`

Credit Hours:...3.00

Contact Hours:...4.87

Introduces computer systems and associated components typically found in the industrial environment. Presents basic skills in word processing, database, spreadsheet, email, specialized vendor software, and communication software. Also covers Internet and Intranet environments, including searching for industry manuals and parts, downloading software and drivers, and other related tasks. Utilizes the Windows operating system in conjunction with proprietary software. Discusses learning management systems including AMTEC curriculum and Moodle Rooms. Laboratory activities.

Prerequisites:.. None

TAFD-120: Industrial Safety Awareness `IT`

Credit Hours:...2.00

Contact Hours:...2.00

Presents a comprehensive approach to safety, designed to give the skilled tradesperson the knowledge of safety fundamentals and practices, from the causes of accidents to the study of safety hazards and rules associated with equipment and tools utilized in modern industrial facilities. Successful completers will be issued the Occupational Safety and Health Administration (OSHA) 30-Hour card for General Industry.

Prerequisites:.. None

TAFD-125: Industrial Safety Awareness with First Aid `IT` `C`

Credit Hours:...3.00

Contact Hours:...3.00

Presents a comprehensive approach to safety designed to give the process technician the knowledge of safety fundamentals and practices, from the causes of accidents to the study of safety hazards and rules associated with equipment and tools utilized in modern industrial facilities. Successful completers will be issued the Occupational Safety and Health Administration (OSHA) 30-Hour card for General Industry and the American Red Cross (ARC) completion cards in Workplace First Aid, Blood-Borne Disease Transmission, Adult Cardio-Pulmonary Resuscitation (CPR), and Adult Automated External Defibrillators (AEDs).

Prerequisites:.. None

TAFD-126: Process Industry Health, Environment, and Safety `IT` `C`

Credit Hours:...4.00

Contact Hours:...4.00

Offers exposure to the various safety, health, environmental, and safety issues directly associated with the process industries. Includes hazard recognition, types of hazards, cyber security, engineering controls, administrative controls, personal protective equipment, safety-related equipment, first aid, and governmental regulations. Emphasizes extensive hands-on experiences.

Prerequisites:....... TAFD-120 or TAFD-125 & TAFD-117 & TAPT-100 or TAE Apprentice Coordinator/Instructor permission

TAFD-130: Industrial Application of Physical Science `IT`

Credit Hours:...3.00

Contact Hours:...3.00

Offers the apprentice lecture and laboratory exposure to the applications of physics and chemistry found in today's industrial workplace. Covers the six elemental machines; applications of forces, motion, and work; and the chemistry of industrial materials and chemical interactions in the environment.

Prerequisites:...TAMA 120 or TAE Apprentice Coordinator/Instructor approval

TAFD-150: Applied Technology `IT`

Credit Hours:...3.00

Contact Hours:...3.00

An introductory course, appropriate for all trades, which uses practical concepts and examples to examine fluid power, electricity, mechanical power transfer, and rigging. Emphasizes appropriate safety procedures and protocols.

Prerequisites:.. None

TAFD-295: Industrial Maintenance Externship `IT` `C`

Credit Hours:...2.00

Contact Hours:...2.00

Provides field experience in an advanced manufacturing mechatronics environment with students working a minimum of four hours per week throughout the 15 week semester. Offers first-hand the activities, work-practices, and procedures of mechatronics maintenance personnel. Intended for those who have never worked in, or been exposed to, mechatronic manufacturing maintenance in an industrial production facility. Students will work with the divisional faculty/staff to identify field placements.

Prerequisites:...............Must have completed 45 credit hours or have TAE Apprentice Coordinator approval

TAFP-150: Introduction to Industrial Hydraulics `IT`

Credit Hours:...4.00

Contact Hours:...4.00

Introduces the principles of fluid power as applied to industrial systems. Presents various hydraulic components and their functions within fluid power systems. Laboratory activities.

Prerequisites:.. TAFD 150 or TAE Apprentice Coordinator/Instructor permission

TAFP-160: Pneumatic Power and Control   **IT**

Credit Hours:...4.00

Contact Hours:..4.00

Explores the principles of fluid power pneumatics as applied to industrial systems. Examines various pneumatic components with respect to their functions within pneumatic power and control systems.

Prerequisites:...TAFP 150 or TAE Apprentice Coordinator/Instructor permission

TAFP-270: Fluid Power Systems: Circuit Design and Troubleshooting   **IT**

Credit Hours:...4.00

Contact Hours:..4.00

Explores the principles of fluid power design and troubleshooting as applied to industrial systems. Presents various hydraulic circuits and discusses functions, efficiencies, and troubleshooting guidelines within fluid power systems.

Prerequisites:...TAFP 150 or TAE Apprentice Coordinator/Instructor permission

TAFP-280: Applied Electrohydraulics   **IT**

Credit Hours:...3.00

Contact Hours:..3.00

Introduces basic electrohydraulic fundamentals, components, and procedures relative to troubleshooting, maintenance, and set-up of proportional and servo valves. Presents theory and practice of electrohydraulics with an emphasis on hands-on laboratory experiences.

Prerequisites:...TAFP 150 or TAE Apprentice Coordinator/Instructor permission

TAGD-110: Basic Shape and Size Interpretation   **IT**

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the concepts of shape and size description of normal surfaced, inclined (single-angle) surfaced, and cylindrical objects. Presents traditional and computer-based drafting techniques. Covers projection of three-dimensional objects into two-dimensional representations, the reverse process, and sketching and modeling of objects.

Prerequisites:... None

TAGD-120: Advanced Graphic Interpretation   **IT**

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the concepts of shape and size description of oblique surfaced objects, sectioning, processes used in the manufacturing environment, and geometric and traditional tolerancing. Requires knowledge of traditional and computer-based drafting techniques.

Prerequisites:...TAGD 110 or TAE Apprentice Coordinator/Instructor permission

TAGD-130: Assembly Detailing   **IT**

Credit Hours:...2.00

Contact Hours:..2.00

Presents the concept of detailing of assembly drawings, including modeling of complex shapes and pictorial drawings of details. Through the use of traditional and computer-based drafting techniques, students explore drawing individual parts in their proper orientation. Modeling clay is required.

Prerequisites:...TAGD 120 or TAE Apprentice Coordinator/Instructor permission

TAGD-140: Compound Angles and Advanced Projection   **IT**

Credit Hours:...3.00

Contact Hours:..3.00

Focuses on the mastery of solid trigonometric principles as applied to the industrial workplace. Includes the solution of solid trigonometric problems using graphic and analytical solutions and problem solving techniques. Requires modeling clay.

Prerequisites:...........................TAGD 120 and TAMA 200 or TAE Apprentice Coordinator/Instructor permission

TAGD-150: Tool, Jig, and Fixture Design   **IT**

Credit Hours:...2.00

Contact Hours:..2.00

Focuses on the mastery of tool-design principles as applied to the industrial workplace. Covers tolerances, fits, principles of tool design, template jigs and fixtures, plate and channel jigs, and materials joining fixtures. Discusses economical design principles and the teamwork approach to various projects.

Prerequisites:...........................TAGD 130 and TAMA 200 or TAE Apprentice Coordinator/Instructor permission

TAGD-155: Cage, Cam Layout, and Fixture   **IT**

Credit Hours:...2.00

Contact Hours:..2.00

Focuses on the mastery of gage design principles as applied to the industrial workplace. Discusses gage design theory, computer-aided manufacturing, cam layout procedures, and fixturing. Emphasizes the team approach to projects.

Prerequisites:...TAGD 150 or TAE Apprentice Coordinator/Instructor permission

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TAGD-160: Press Working Fundamentals   IT

Credit Hours:..2.00

Contact Hours:...2.00

Discusses basic metal deformation theory, presses and ancillary equipment, die construction, and die component identification. Covers various die types and draws the various detail components using both traditional and computer-aided drafting.

Prerequisites:...TAGD 130 or TAE Apprentice Coordinator/Instructor permission

TAGD-165: Cutting and Forming Dies   IT

Credit Hours:..3.00

Contact Hours:...3.00

Presents basic die design criteria and methods. Introduces various die types and draws the various die assemblies using both traditional and computer-aided drafting.

Prerequisites:...TAGD 130 or TAE Apprentice Coordinator/Instructor permission

TAGD-171: Descriptive Geometry: Lines and Planes   IT

Credit Hours:..2.00

Contact Hours:...2.00

Covers basic descriptive geometry theory, and explores how to use orthographic principles to find true views of lines and planes.

Prerequisites:...TAGD 120 or TAE Apprentice Coordinator/Instructor permission

TAGD-172: Descriptive Geometry: Planes, Solids, and Developments   IT

Credit Hours:..2.00

Contact Hours:...2.00

Presents basic descriptive geometry theory and practice. Discusses how to use orthographic principles to find true views of planes and solids and their intersections.

Prerequisites:...TAGD 171 or TAE Apprentice Coordinator/Instructor permission

TAGD-280: Panel Tipping   IT

Credit Hours:..2.00

Contact Hours:...2.00

Discusses how to convert vehicle body position drawings to required die positions in various die operations. Explores strip stock development and part clearance-interference conditions.

Prerequisites:...TAGD 172 or TAE Apprentice Coordinator/Instructor permission

TAIM-100: Industrial Materials   IT

Credit Hours:..3.00

Contact Hours:...3.00

Covers concepts of material usage in industry. Includes extraction of metals, identification of ferrous and non-ferrous metals, non-metals (e.g. plastics, elastomers, and ceramics), mechanical and physical properties of materials, destructive and non-destructive testing procedures, crystalline and non-crystalline structures of materials, materials forming operations, and heat treatment theory and practice.

Prerequisites:..None

TAMA-110: Industrial Applications of Basic Mathematical Principles   IT

Credit Hours:..2.00

Contact Hours:...2.00

Utilizes shop problems to help students relate math to various job situations. Topics include addition, subtraction, multiplication, and division of whole and mixed numbers and common and decimal fractions; percents, averages, and estimates; graphs, tables, and statistical measure; powers and roots; linear, angular, and circular measure; surface area, volume, and cubic measure; ratios and proportion; and metrics and metric conversion.

Prerequisites:..None

TAMA-115: Metric Systems and Conversions   IT

Credit Hours:..2.00

Contact Hours:...2.00

Covers the history of measurement systems with an emphasis on the metric system and conversion techniques between metric and English systems.

Prerequisites:..None

TAMA-120: Industrial Applications of Algebraic Principles   IT

Credit Hours:..3.00

Contact Hours:...3.00

Emphasizes mastery of basic algebraic principles as related to the industrial environment. Covers symbols, positive and negative numbers, equations, exponents, roots, and formulas.

Prerequisites:...TAMA 110 or TAE Apprentice Coordinator/Instructor permission

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TAMA-130: Industrial Applications of Geometric Principles   IT

Credit Hours:..2.00

Contact Hours:..2.00

Covers the fundamental principles of plane geometry with emphasis on application to the industrial environment. Explores angular, circular, linear, area, and volume measurement in relation to the types of geometric figures and configurations found in industry.

Prerequisites:...TAMA 120 or TAE Apprentice Coordinator/Instructor permission

TAMA-200: Industrial Applications of Trigonometric Principles   IT

Credit Hours:..3.00

Contact Hours:..3.00

Focuses on trigonometric principles as applied to the industrial workplace. Covers trigonometric functions, solution of right triangles, solution of oblique triangles, and problem solving techniques.

Prerequisites:...TAMA 130 or TAE Apprentice Coordinator/Instructor permission

TAMJ-110: Welding Fundamentals   IT

Credit Hours:..3.00

Contact Hours:..3.00

Explores basic adhesion and cohesion fundamentals, equipment, and procedures relative to: shielded metal arc welding (SMAW), oxy-fuel brazing (TB), gas metal arc welding (GMAW), gas tungsten arc welding, and oxy-fuel cutting (OFC). Includes oxy-fuel cutting, soldering and brazing theory and practice, AC and DC welding equipment and applications, flat and horizontal welding techniques, arc welding electrodes, gas metal arc welding principles and practices, and gas tungsten arc welding principles. All students will be required to wear clothing appropriate to a welding environment. It is also recommended that the student bring a pair of slip-joint pliers

Prerequisites:.. None

TAMJ-112: Creative Metals I   IT

Credit Hours:..3.00

Contact Hours:..3.00

Introduces welding and metal forming. Focuses on safety, metal forming with Oxy/Fuel torch and Plasma Arc cutting, and the metal joining processes of Oxy/Fuel welding, GMAW wire feed welding, and GTAW arc welding. Safety and use of shop tools will also be covered.

TAMJ-115: Advanced Welding Techniques   IT

Credit Hours:..2.00

Contact Hours:..2.00

Builds on the skills introduced in TAMJ 100. Focuses on the structure of adhesion, cohesion, cutting theory and the transfer of knowledge to shop applications for persons who will use these processes in their work. All students will be required to wear clothing appropriate to a welding environment. It is also recommended that the student bring a pair of slip-joint pliers.

Prerequisites:...TAMJ 110 or TAE Apprentice Coordinator/Instructor permission

TAMJ-116: Creative Metals II   IT

Credit Hours:..3.00

Contact Hours:..3.00

Focuses on the safety, the advanced techniques of metal forming with Oxy/Fuel torch and the metal joining processes of Oxy/Fuel welding, GMAW wire feed welding, and GTAW welding. Also includes how to use these techniques in a creative way.

Prerequisites:...TAMJ 112 or Instructor permission

TAMJ-120: Welding: Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW) Techniques   IT

Credit Hours:..2.00

Contact Hours:..2.00

Covers the theoretical knowledge as well as the manipulative skills needed to utilize inert arc welding equipment. Topics include: inert arc welding equipment, gas tungsten arc welding (GTAW), gas metal arc welding (GMAW), and welding in flat, horizontal, and vertical positions. This course is a 90% hands-on laboratory experience. All students will be required to wear clothing appropriate to a welding environment. It is also recommended that the student bring a pair of slip-joint pliers.

Prerequisites:.....................TAMJ 110 or permission of the TAE Apprentice Coordinator/Instructor

TAMJ-125: Welding: AWS Pipe Welding   IT

Credit Hours:..2.00

Contact Hours:..2.00

Provides the theoretical knowledge and the time for skill development for persons interested in becoming welders qualified by the American Welding Society (AWS). Topics include procedures in setup, welding, electrodes, and information about the AWS test. Students are required to wear clothing appropriate to a welding environment. It is also recommended that the student bring a pair of slip-joint pliers. NOTE: Course topics help students prepare for the AWS test, but the exam is not included in this course.

Prerequisites:...TAMJ 115 or TAE Apprentice Coordinator/Instructor permission

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TAMJ-145: Welding: Advanced Gas Torch Techniques `IT`

Credit Hours:..2.00

Contact Hours:..2.00

An advanced course designed to increase oxy-fuel gas torch techniques and procedures used in welding, brazing, and soldering. Topics include preparation and techniques for oxy/fuel welding in all positions, brazing techniques, and assembly of a pressure box. This course is a 95% hands-on laboratory experience. Students are required to wear clothing appropriate to a welding environment, and it is recommended that the student bring a pair of slip-joint pliers.

Prerequisites:......................TAMJ 115 or permission of the TAE Apprentice Coordinator/Instructor.

TAMJ-230: Welding: AWS Pipe and Pressure Vessel Certification `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Designed for persons experienced in all-position shielded metal arc welding who wish to acquire American Welding Society (AWS) qualification papers. All welding test procedures conform to the AWS standards. NOTE: Submitting test specimens to the local materials laboratory, an optional segment of the course, requires an additional fee.

Prerequisites:..TAMJ 125 or TAE Apprentice Coordinator/Instructor permission

TAMJ-235: Welding: GTAW and GMAW Certification `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Course topics introduce certification requirements for all-position Gas Tungsten Arc Welding (GTAW) and/or Gas Metal Arc Welding (GMAW) in accordance with the standards of the American Welding Society (AWS). Submitting test specimens to the local materials laboratory is optional and requires an additional fee. Students must wear clothing appropriate to a welding environment. It is recommended that students bring a pair of slip-joint pliers to class. NOTE: Course topics help students prepare for welder certification by the American Society of Mechanical Engineers and/or American Welding Society welder certification, but certification is not included in this course.

Prerequisites:..TAMJ 120 or TAE Apprentice Coordinator/Instructor permission

TAMJ-240: Welding: Tool and Die Welding `IT`

Credit Hours:..3.00

Contact Hours:..3.00

Studies cast iron and alloy steels that are used in the tool and die industry, the effects of the alloys on tools and dies, and how the welding process can be used successfully. Skill development in welding and repair of these cast irons and steels will incorporate both SMAW and GTAW processes. This course is an 70% hands-on laboratory experience. All students will be required to wear clothing appropriate to a welding environment. It is also recommended that the student bring a pair of slip-joint pliers.

Prerequisites:......................TAMJ 115 or permission of the TAE Apprentice Coordinator/Instructor.

TAMN-100: Shop Tools and Techniques `IT`

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the basic tools, safety protocols, and technical information required by the skilled trades. Includes non-precision and precision measurement tools and methods, layout tools and techniques, hand and bench tools, drills and drilling machines, principles of metal cutting and metal cutting saws, pedestal grinders, and various manufacturing processes.

Prerequisites:..None

TAMN-120: Machine Tool Applications `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Presents the mechanisms, operation, tooling, and accessories of the lathe and milling machine. Covers precision measurements and measuring devices, basic machine tool operations, metal cutting theory, cutting tools and cutting tool materials, and cutting fluids. Emphasizes safety protocols in a lab setting.

Prerequisites:..TAMA 120 or TAE Apprentice Coordinator/Instructor permission

TAMN-130: Advanced Manufacturing Processes `IT`

Credit Hours:..2.00

Contact Hours:..1.87

Explains the use of conventional abrasives and super abrasives, as well as traditional grinding machines. Covers advanced milling applications utilizing the horizontal boring mill; application of basic and advanced cutting tool materials; electrical discharge machining and wire cutting; electrochemical, abrasive flow, ultrasonic, and abrasive water jet machining; electromagnetic, electro spark, and powder metallurgy forming; various laser applications; and rapid prototype development and robotics/automation.

Prerequisites:..TAMN 120 or TAE Apprentice Coordinator/Instructor permission

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TAMN-220: Advanced Computer Numerical Control Techniques `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Covers fundamentals of computer numerical control (CNC), with emphasis on generic application to both vertical and horizontal milling machines. Examines how to use software to program CNC operations involving linear, circular, and helical interpolation. Discusses how canned cycles, auto routines, and various preparatory functions are used in programming, and then applied to machine functional work pieces on a fully operational CNC trainer. Provides a review of programmer math.

Prerequisites:.......................................TAMA 200 Apprentice Coordinator/Instructor permission

TAMT-110: Mechanical Power Transmission `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Presents installation and maintenance of mechanical power transmission systems. Covers bearings, couplings, belts, chains, shafts, pulleys, and speed reducers used in the modern factory by skilled trades.

Prerequisites:.......................................TAMA 120 or TAE Apprentice Coordinator/Instructor permission

TAMT-115: Maintenance Trades Print Reading `IT`

Credit Hours:..3.00

Contact Hours:..3.00

Covers shape description; conventions and symbols; size description; notes and instruction associated with manufacturer's and maintenance-related drawings, including castings, weldments, and machined parts; electrical/electronic schematics and ladder diagrams; piping and fluid power-related drawings and schematics; structural and architectural drawings; and sheet-metal and plant layout. For apprentices and trainees in industrial plant maintenance trades.

Prerequisites:.......................................TAGD 110 or TAE Apprentice Coordinator/Instructor permission

TAMT-123: Maintenance Print Reading: Structural Steel and Conveyors `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explores how to create a basic shop drawing of structural steel shapes and perform print reading of conveyor structures. Also introduces structural steel detail drawings and how print reading techniques relate to conveyors. Requires the purchase of the following materials for use during week 6 and beyond: ¼" grid drawing paper, triangles (45° and 30°-60°-90°), ruler/architects scale, eraser, scissors, rubber cement, colored pencils or highlighters, and drawing pencils (H and HB lead).

Prerequisites:..................................TAGD 110, TAMA 120, or TAE Apprentice Coordinator/Instructor permission

TAMT-126: Maintenance Print Reading: Plant Layout `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the techniques and procedures of plant layout and material handling. Discusses how to analyze and develop information in order to produce a plant layout. Covers print reading skills with emphasis on industrial equipment drawings and how to make simple plant layout drawings for the production of a part using basic drafting techniques.

Prerequisites:.......................................TAGD 110 or TAE Apprentice Coordinator/Instructor permission

TAMT-200: Predictive Maintenance - Shaft Alignment and Couplings `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Provides specialized instruction in the practices and equipment used in shaft alignment, and the end-to-end and parallel alignments of machines. Explores machine failures due to rotating shaft misalignment and vibration created from shaft center lines not being in the same plane. Covers inefficiencies and increased wear due to misalignment, shaft alignment methods, soft foot, thermal growth, rim, face, reverse dial indicator, and MPT couplings.

Prerequisites:.......................................TAMT 110 or TAE Apprentice Coordinator/Instructor permission

TAMT-210: Predictive Maintenance- Vibration Analysis `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Provides specialized instruction in diagnosing and resolving machinery vibration in rotating equipment, the most cost-effective methods to reduce maintenance costs, and how to extend machinery life.

Prerequisites:..................................TAMT 110, TAMA 130, or TAE Apprentice Coordinator/Instructor permission

TAMT-220: Advanced Rigging `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Presents safe rigging practices and equipment used by mechanical trades people. Covers fiber and wire rope, block and tackle, lift and rigging chain, proof test, safe working load, design factor, sling geometry, fittings, and lifting and moving equipment.

Prerequisites:.......................................TAMA 130 or TAE Apprentice Coordinator/Instructor permission

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TAMT-260: Gearing `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Discusses the calculation of standard American National, United States V, Metric, Acme, and Worm screw threads. Covers standard notations and formulas for spur gears, bevel gears, worm and worm wheels, and helical gears. Also explains replacement of spur gears with helical gears, the use of idler gears, and discusses calculations for plain and differential indexing.

Prerequisites:..TAMA 200 or TAE Apprentice Coordinator/Instructor permission

TAPI-105: Introduction to Industrial and Pneumatic Controls `IT`

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the basic principles and techniques used in the measuring and controlling of an industrial process. Stresses measuring, tuning, and calibration of pneumatic instrumentation and controls. Examines pressure, temperature level, flow, and analytic control systems. Covers fundamental control techniques including open loop and closed loop control, and three modes of control - cascade, adaptive, feed forward, and feedback. Studies fundamental methods of calibration and repair of pneumatic controllers, transducers, transmitters, and control valves. Laboratory activities.

Prerequisites:... None

TAPI-120: Instrumentation: Print Reading `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Explores drawing, reading, and interpreting standard instrumentation and electrical drawings, diagrams, and schematics. Emphasizes using ANSI, ISA, SAMA, and IEEE standard symbols and other accepted industry protocols. Also stresses appropriate techniques in using drawings, diagrams, and schematics to troubleshoot and locate equipment.

Prerequisites:.. TAPI 105 or TAE Apprentice Coordinator/Instructor permission

TAPI-201: Instrumentation: Industrial Practices `IT` `C`

Credit Hours:..4.00

Contact Hours:..4.00

An advanced course covering standard practices and procedures used by instrument, control, and automation qualified personnel and/or individuals in the industrial work environment. Includes current national standards, current practices and procedures for manufacturing process start-up, equipment installations, troubleshooting, and in-shop equipment repair.

Prerequisites:..TAPI 120, TAPI 105 or TAE Apprentice Coordinator/Instructor permission

TAPP-100: Fundamentals of Plumbing and Pipefitting `IT`

Credit Hours:..3.00

Contact Hours:..3.00

Explains the development of the proper procedures for the sizing, selection, and installation of pipe and fittings. Includes the development of pipe welding templates and bending of tubing and pipe.

Prerequisites:... None

TAPP-110: Drains, Wastes, and Vents `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Discusses how to properly select materials for the installation and repair of sewer, soil, waste, and vent systems. Covers proper procedures for the design and layout of residential and commercial systems, and the use of blueprints and isometric diagrams.

Prerequisites:... None

TAPP-120: Heating Systems `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the principles of steam and hydronic heating systems. Covers proper sizing and selection of converters, traps, and boilers.

Prerequisites:... None

TAPP-250: Plumbing Code `IT`

Credit Hours:..2.00

Contact Hours:..2.00

Introduces the use and application of the Michigan Mechanical Plumbing Code. Covers how to review each article of the code for content and application, and how to interpret plans and drawings as related to plumbing and pipefitting.

Prerequisites:..TAPP 100 or TAE Apprentice Coordinator/Instructor permission

TAPT-100: Introduction to Process Technology Practices `IT`

Credit Hours:..3.00

Contact Hours:..3.00

Provides an overview of process-based manufacturing industries with a focus on process technology operations using a systems perspective. Includes concepts of safety, process instruments, environmental standards, and continuous process improvement.

Prerequisites:... None

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TAPT-110: Process Technology Equipment   IT C

Credit Hours:..3.00

Contact Hours:..2.87

Introduces students to the purpose, components, operation, and troubleshooting of the equipment used within the process industry.

Prerequisites:... TAPT-100

TAPT-120: Introduction to Process Instrumentation   IT

Credit Hours:..3.00

Contact Hours:..3.00

Studies physical and chemical variables and the various instruments used to sense, measure, transmit, and control these variables. Introduces control loops and their components including controllers, regulators, sensors, and final control elements. Also discusses how to create instrumentation drawings and diagrams when developing and analyzing control loops.

Prerequisites:.. None

TAPT-125: Process Technology Instrumentation II   IT

Credit Hours:..4.00

Contact Hours:..4.00

Provides a review of microprocesser control components and control systems, power supplies, emergency shutdown procedures, and malfunctions. Examines switches, relays, and annunciator systems. Also covers covers signal conversion and transmission; controllers; and control schemes that maintain environmental regulations, energy efficiency, and quality of the process.

Prerequisites:...TAPT 120 or TAE Apprentice Coordinator/Instructor permission

TAPT-130: Process Technology Systems   IT

Credit Hours:..3.00

Contact Hours:..3.00

Studies the interrelation of process equipment and process systems. Examines how to arrange process equipment into basic systems; describes the purpose and function of specific process systems; explains how factors affecting process systems are controlled under normal conditions; introduces the concept of system and plant economics; and explores how to recognize abnormal process conditions.

Prerequisites:...TAPT 100 or TAE Apprentice Coordinator/Instructor permission

TAPT-140: Process Technology Quality   IT

Credit Hours:..3.00

Contact Hours:..3.00

Studies the quality manufacturing practices used within the process industry, including concepts such as operating consistency, continuous improvement, plant economics, team skills, and statistical process control (SPC).

Prerequisites:...TAPT 100 or TAE Apprentice Coordinator/Instructor permission

TASM-100: Basic Sheet Metal Layout and Fabrication   IT

Credit Hours:..3.00

Contact Hours:..3.00

Covers layout, forming, and fabrication of basic sheet metal ductwork fittings and use of hand/power tools and equipment needed to accomplish various tasks. Explains how to fabricate square/round sheet metal ductwork, tapers, transitions, offsets, and how to fasten ductwork together.

Prerequisites:...TAMA 120 or TAE Apprentice Coordinator/Instructor permission

TASM-120: Sheet Metal Layout: Radial and Triangulation   IT

Credit Hours:..2.00

Contact Hours:..2.00

Covers the development of geometrical elements of structures, their intersections by the radial line, triangulation methods of sheet metal layout, the drawing of development layouts, and the forming of cardboard or sheet metal models.

Prerequisites:...TASM 100 or TAE Apprentice Coordinator/Instructor permission

TASM-130: Sheet Metal Layout: Applied Triangulation   IT

Credit Hours:..2.00

Contact Hours:..2.00

Covers the development of geometrical elements of structures by the triangulation method of sheet metal layout. Includes the development of stretchouts and making cardboard or sheet metal models of transition pieces.

Prerequisites:...TASM 120 or TAE Apprentice Coordinator/Instructor permission

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TCM-131: Introduction to Telecommunication   COM

Credit Hours:..3.00

Contact Hours:..3.00

A survey course investigating the various electronic communication media, as well as the print media, from historical, economic, and social viewpoints.

Prerequisites:.. ENG-131 Eligible

TCM-132: Film History and Criticism   COM

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the film medium and the film experience as entertainment, artistic expression, and social communication, through examination of production techniques, critical theories, and historic examples.

Prerequisites:...ENG 131

TCM-151: Digital Audio Editing   COM

Credit Hours:..1.00

Contact Hours:..0.93

Introduces digital audio editing using an industry standard software editing program on computers in the Telecommunication audio production labs. Covers both hardware and software issues, and explores how to perform short editing exercises.

Prerequisites:............................... ENG-093 and/or ENG-081 Eligible

TCM-157: Digital Video Editing   COM C

Credit Hours:..1.00

Contact Hours:..0.93

An intensive introduction to digital video editing, using an industry standard software editing program in the Telecommunication computer video lab. Covers both hardware and software issues, and explores how to complete short editing exercises.

Prerequisites:............................... ENG-093 and/or ENG-081 Eligible

TCM-189: WHFR Staff Training   COM

Credit Hours:..1.00

Contact Hours:..0.93

Provides an orientation to the non-commercial, educational radio station licensed to the college. Covers essential station rules and procedures, operation of equipment, and basic performance skills. Course is open to all students but is required of those who wish to join the staff and assist in the operation of WHFR.

Prerequisites:.. None

TCM-235: Topics in Film Study   COM

Credit Hours:..3.00

Contact Hours:..3.00

Offers special study in an area of film, organized by theme, genre, historical period, or other criteria. Specific topics are listed in the semester class schedule; see individual course syllabi in the Communications division office.

Prerequisites:.. ENG-131 Eligible

TCM-241: Media Writing   COM C

Credit Hours:..3.00

Contact Hours:..3.00

Offers an analysis of and practice with the forms and formats of mass media script writing: commercial, promotional, public service, interview, instructional, and dramatic.

Prerequisites:...ENG 131

TCM-243: Media Performance   COM C

Credit Hours:..3.00

Contact Hours:..3.00

Offers study and practice in the skills required for successful communication from behind microphones and in front of cameras, with special attention on announcing, interviewing, and acting.

Prerequisites:.. ENG-131 Eligible

TCM-251: Audio Production   COM C

Credit Hours:..3.00

Contact Hours:..3.00

A survey of the techniques of professional audio recording and playback, utilizing a variety of microphones and recorders, with editing done by dubbing and digital multi-track work using industry software, through production assignments in radio programming.

Prerequisites:.......................................TCM-151, ENG-131 Eligible

TCM-257: Video Production I   COM C

Credit Hours:..3.00

Contact Hours:..4.00

Introduces the basic concepts and skills of film and video production. The entire production process from script to editing is discussed and experienced with emphasis on key equipment and techniques. Differences between media are assessed and analyzed. Projects include individual and group work, both in the studio and on location.

Prerequisites:.......................................TCM-157, ENG-131 Eligible

TCM-258: Film/Video Production II   **COM**

Credit Hours:..3.00

Contact Hours:..4.00

Offers further knowledge and development of skills required for film, video, and multimedia production, with the emphasis on advanced concepts in lighting and editing as part of program production in specialized formats for news, entertainment, and education.

Prerequisites:.. TCM 157, TCM 251, and TCM 257

TCM-261: Broadcast Journalism   **COM** **C**

Credit Hours:..3.00

Contact Hours:..3.00

TCM 261 is a real life experience, guided by a Telecommunication instructor, in broadcast news writing for the mediums of radio and television. Working as a reporter on the news staff of WHFR-FM 89.3, the student-staffed station of Henry Ford College, the student is expected to weekly contribute quality broadcast news stories: written copy, copy with actualities, and prerecorded interviews.

Prerequisites:... ENG 131 and TCM 251

TCM-281: Capstone   **COM**

Credit Hours:.. 1.00

Contact Hours:..0.93

Provides required assessment of knowledge and skill for students in their last semester of course work before completing their Associate of Arts degree in Telecommunication. Should be taken during the student's last term of required TCM classes.

Prerequisites:..................None. Should be taken during the student's last term of required TCM classes. By instructor permission only.

TCM-294: Telecommunication Internship   **COM**

Credit Hours:..3.00

Contact Hours:..3.00

Offers on-the-job experience with a telecommunication business, such as a radio or TV station, a cable TV studio, or advertising or public relations office. Minimum requirement of 150 hours of work (volunteer or paid as established by selected company). Positions vary from semester to semester. Student should contact the instructor for counseling and permission at least one month before the semester begins.

Prerequisites:............... To be taken towards end of student's TCM degree completion. Pre-approval from Instructor is required before enrolling.

TCM-295: Directed Study   **COM**

Credit Hours:..3.00

Contact Hours:..3.00

Instructor-guided work on a student-initiated project in the Telecommunication field. Project must be approved by instructor and can be either scholarly or creative in nature, or both.

Prerequisites:...Instructor Permission only

THEA-131: Theatre Appreciation   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Explores the components, methods, and history of theatrical production. Subject areas may include but are not limited to acting, directing, and technical theatre.

Prerequisites:..ENG-093 and/or ENG-081 Eligible

THEA-132: Acting I   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Introduces basic acting techniques, theories of acting, and rehearsal procedures. Emphasizes modern and contemporary comedies, and dramas. Students perform scenes from contemporary plays.

Prerequisites:..ENG-093 and/or ENG-081 Eligible

THEA-133: Technical Theatre   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.87

Offers practical application of the fundamentals of set construction, rigging, painting, sound, lighting, and special effects.

Prerequisites:.. None

THEA-134: Technical Theatre Specialties: Rotating Skills   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Focuses on understanding theory through practical application on multiple projects. Provides experience in one of the following specialized areas: scenic and/or properties design, construction and/or painting, theatre sound: design, engineering and operation; special effects: design, safety, engineering and operation; production management, stage management, house management, lighting: design, hanging and operations; or promotion and publicity.

Prerequisites:.. None

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Courses

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THEA-135: Introduction to Stage Makeup SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Provides an analysis of the basic functions of stage makeup, demonstrates the art of makeup application, and explores age, animal, fantasy, horror, and foam latex prosthetic makeup techniques. Students design and apply their own makeup as well as design and apply makeup for actors in HFC mainstage productions.

Prerequisites:................................ENG-093 and/or ENG-081 Eligible

THEA-138: Stage Costuming SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the history, design, and construction of costumes for the stage. Students selectively study the history of stage costuming from the Greeks to the present day with an emphasis on line, form, production requirements, principles of stage costume design, and building techniques.

Prerequisites:................................ENG-093 and/or ENG-081 Eligible

THEA-140: One-Act Play Production SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Offers lecture and practice in the organization and specific skills necessary for the public performance of one-act plays including the areas of acting, assistant directing, stage management, publicity, and house management.

Prerequisites:... None

THEA-142: Theatrical Production SSAF C

Credit Hours:...3.00

Contact Hours:..6.00

Offers lecture and practice in the public performance of a full-length comedy, drama, or musical. Students are provided opportunities in the areas of acting, assistant directing, stage management, house management, and other appropriate production functions.

Prerequisites:... None

THEA-144: Improvisation for the Actor SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Introduces the principles and practice of improvisational techniques as applied to performance. Offers a solid theoretical basis and practical experience with vocal, movement, character, scene, style, and multi-scene improvisation as an introduction to rehearsal approaches, character development, and creativity.

Prerequisites:................................ENG-093 and/or ENG-081 Eligible

THEA-145: Stage Combat SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Explores basic theatrical fencing, broadsword fighting, falling, and hand-to-hand combat, based on an awareness of the roles of stage combat in the theatre of past and present.

Prerequisites:... None

THEA-149: Children's Theatre Production SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Offers lecture and practice in the organization of specific skills necessary for the public performance of children's plays such as acting, assistant directing, stage management, publicity, and house management. Requires students to participate in HFC's annual Children's Theatre presentation.

Prerequisites:... None

THEA-150: Stagecraft SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Offers a basic survey of the major techniques and theories of scenography used in the modern theatre.

Prerequisites:................................ENG-093 and/or ENG-081 Eligible

THEA-232: Acting II SSAF C

Credit Hours:...3.00

Contact Hours:..3.00

Explores various acting styles that may include Greek, Medieval, Renaissance, French Classical, American Melodrama, Farce, Musical Theater, Artaudian Theatre, and other appropriate styles.

Prerequisites:................................ENG-093 and/or ENG-081 Eligible

THEA-233: Advanced Technical Theatre SSAF C

Credit Hours:...3.00

Contact Hours:..3.87

Requires active participation in the technical aspects of the semester's HFC mainstage production. Instructor assigns students to key technical positions in the areas of lighting, shifting, rigging, properties, painting, building, sound, makeup, costumes, and special effects.

Prerequisites:...THEA 133

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Courses

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THEA-234: Advanced Technical Theatre: Rotating Skills   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

This advanced production management course offers theoretical grounding and practical experience in a design, assistant directing, stage management, and publicity management position, plus concurrent assignments in a live production environment.

Prerequisites:...THEA 133 and 233

THEA-235: Topics in Theatre   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Provides special study in the area of theatre, organized by style, production approach, historical period, or other criteria. May be taken twice for credit, six hours maximum, but the two topics must be different. Specific topics and any prerequisites are listed in the current semester's class schedule or may be obtained through the departmental office.

Prerequisites:.......................................Instructor permission

THEA-238: Theatre History   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Offers a survey of theatrical production, including acting, directing, theatre architecture, artistic movements, and significant ideas that affect the development of theatre from the Greeks through the present. Emphasizes individual research and projects.

Prerequisites:.................................Permission of instructor

THEA-242: Advanced Theatrical Production   SSAF C

Credit Hours:..3.00

Contact Hours:..6.00

Offers an in-depth exploration of practical theatre production.

Prerequisites:..THEA 142

THEA-255: Lighting   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Examines the processes, techniques, and principles involved in lighting the stage, studio, and location. Discusses the properties and uses of light, color media, and stage lighting equipment. Also offers the opportunity to participate in the stage lighting of an HFC theatre production.

Prerequisites:.............................ENG-093 and/or ENG-081 Eligible

THEA-256: Directing   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Presents the principles of stage direction, how to survey the areas of composition, picturization, movement, rhythm, auditions, casting, rehearsals, and actor psychology.

Prerequisites:...ENG-131 Eligible

THEA-257: Pantomime and Physical Techniques for the Actor   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Explores the importance of the body in the acting process, with an emphasis on practical experience. Presents various techniques and improvisational exercises necessary to develop a greater sensitivity to and accuracy with emotional expression and physical characterization in a variety of styles.

Prerequisites:... None

THEA-259: Experimental Theatre Production   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Offers lecture and practice in the specific skills necessary for the production of an experimental play. Students are exposed to plays that approach the non-traditional theatrical experience including multimedia, impressionism, expressionism, surrealism, improvisation, performance art, and absurdism. Students are provided opportunities in the areas of acting, assistant directing, stage management, publicity, and house management.

Prerequisites:... None

THEA-260: Acting III   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

An audition monologue preparation course that focuses on contemporary realism, and also includes classical work. Students create preparation processes, resumes, and practice audition interviews. Advanced acting technique exercises are practiced to develop convincing character and staging.

Prerequisites:...................................Permission of instructor

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THEA-270: Advanced Experimental Theatre Production   SSAF

Credit Hours:..3.00

Contact Hours:..3.00

Explores advanced techniques in areas of experimental theatre production, including but not limited to, use of various space types, improvisation in public performance, audience participation, absurd-ism, expressionism, surrealism, epic, forum, unusual interpretations of classical period or modern texts, and the use of electronic and digital media to unify a production.

Prerequisites:...THEA 144

THEA-271: Advanced One-Act Play Production   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Provides in-depth experience in one-act play production on an advanced level.

Prerequisites:... None

THEA-272: Improvisation II   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Explores how to develop and refine intermediate and advanced im-provisational acting skills in the areas of characterization, vocal styles, genre practice, and multi-scene improvisation.

Prerequisites:...THEA 144

THEA-273: Voice for the Actor   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Offers both theoretical and practical study of basic and intermedi-ate-level vocal technique for a spoken live performance. Explores proper breath and alignment, sound production, articulation, projec-tion, subtext, dialect, and character.

Prerequisites:... ENG-093 and/or ENG-081

THEA-281: Theatre Capstone   SSAF C

Credit Hours:..1.00

Contact Hours:..0.93

Provides the required assessment of knowledge and skills for students in their last semester of course work for the Associate of Arts degree in Theatre.

Prerequisites:... None

THEA-2901: Directed Study   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Allows additional advanced study under direction in any of the classes offered by the theatre program. Student requesting directed study must have completed the sequence of courses offered in a given subject area before requesting additional directed study in that area. May be taken twice for credit, six hours maximum, and course subject must be different.

Prerequisites:...All courses in the required sequence for the area chosen, and permission of the instructor

VTL-150: Special and Visual Effects for Stage and Screen   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Introduces the major types of computer generated visual effects utilized in motion pictures, video, and film production for stage and screen effects.

Prerequisites:...ENG-093 and/or ENG-081 Eligible

VTL-235: Science Fiction, Fantasy, and Horror Films   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Examines the history of films that emphasize the fantastic, from the beginning of film history to the present. To compliment existing VTL classes, this course devotes special attention to the visualization of the fantastic as represented in the special and visual effects of science fiction, fantasy, and horror films.

Prerequisites:... ENG-093 and/or ENG-081

VTL-262: Introduction to Motion Capture   SSAF C

Credit Hours:..3.00

Contact Hours:..3.00

Presents the principles of motion capture performance and motion capture production for use in virtual theatricality, motion pictures, gaming, television, Web media, and motion studies. In a lab setting, coursework examines the motion capture pipeline from setting up the lab and capturing data to applying the data to animated characters in MotionBuilder. Limited to body capture only.

Prerequisites:...ENG-093 and/or ENG-081 Eligible

Courses

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VTL-263: Intermediate Motion Capture **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Explores the principles of motion capture performance and motion capture production for use in virtual theatricality, motion pictures, gaming, television, World Wide Web media, and motion capture studies. Conducted in a lab setting, coursework focuses on cleaning and editing data, hand capture, and facial capture.

Prerequisites:...VTL 262

VTL-264: Advanced Motion Capture Application **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Covers the principles of motion capture performance and motion capture production for use in virtual theatricality, motion pictures, gaming, and motion studies.

Prerequisites:...VTL 263

VTL-265: Introduction to Motion Capture Body Performance for Stage **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

A lab-based computer class dealing with the principles of motion capture performance for use in virtual theatricality, motion pictures, gaming, television, Web media, and motion studies. Students work through a structured series of assignments that culminate in a 20-second animation based upon a particular sequence, gesture, or motion. Focuses on body performance only.

Prerequisites:... None

VTL-266: Green Screen Visual Effects for Stage and Screen **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Presents the principles of compositing and green screen application for use in virtual theatricality, motion pictures, gaming, television, and Web media.

Prerequisites:.. ENG-093 and/or ENG-081 Eligible

VTL-267: Stereoscopic Cinematography for Stage and Screen **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Examines the historical and practical aspects of stereoscopic cinematography for stage and screen.

Prerequisites:.. ENG-093 and/or ENG-081 Eligible

VTL-268: Film Acting I **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Introduces actors to a variety of film acting techniques.

Prerequisites:.. ENG-093 and/or ENG-081 Eligible

WR-130: Introduction to the Academic Study of Religion **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Explores the spiritual impulse as reflected in non-traditional as well as traditional contexts. Examines various aspects of religions that influence both individuals and cultures including the nature of ultimate reality and its communication through symbols, rituals, scriptures, religious experiences, prophets, and sages. All of these religious phenomena will be considered in light of the contemporary influences of globalization, science, and environmental challenges.

Prerequisites:... ENG-131 eligible

WR-131: Religious Traditions in the World **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Introduces the beliefs, practices, and experiences of the major world religious traditions. In addition to examining the particulars of each faith, this course emphasizes current perspectives in religious studies that serve to clarify the nature and functions of religion as a force shaping, and being shaped by, the increasingly pluralistic contemporary world. Religion will be treated seriously as an important part of people's identity and a crucial prerequisite for understanding and appreciating others and selves.

Prerequisites:... ENG-131 eligible

WR-232: Western Religions: Judaism, Christianity, and Islam **SSAF** **C**

Credit Hours:..3.00

Contact Hours:...3.00

Explores the differences and commonalities among Judaism, Christianity, and Islam. Discusses how to help sensitize others to the diverse ways that Western religious traditions pursue the basic questions of ultimate reality. Also examines how to define religion, explore its function and purpose, and identify the origins of Western religious motifs still very much in evidence in the twentieth century.

Prerequisites:................................... ENG-131 and either WR-130 or WR-131, with grades "C" or better

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WR-233: Eastern Religions   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Introduces the beliefs, practices, and experiences of major Eastern religions. Explores Eastern religious philosophies as a whole complex worldview, as well as investigates the unique beliefs and practices of several Eastern religions. Also exams historical roots, developmental growth as well as modern versions of major Eastern religions which enables the student to understand the perspective of Eastern religious philosophies.

Prerequisites:....................................ENG-131 and either WR-130 or WR-131, with grades "C" or better

WR-234: Judaism   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Introduces and explores the evolving practice of Judaism, from the formation of its foundational documents to its current methodologies in the United States and Israel. Addresses the ancient Near East context from 1240 BCE – 70 CE, the rabbinical period from 200 CE – 1575 CE, and the modern diaspora from 1800 to the present, including holidays, the lunar calendar, and some theology.

Prerequisites:..WR-232, grade "C" or better

WR-235: Christianity - The First 1000 Years   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Introduces the origins of Christianity beginning with the figure of Jesus and his portrayal in early Christian writings. Studies the early teachings and their influence on later Christian theological understanding of the nature of Jesus through readings in the New Testament. Also explores the historical development of Christianity from its origins in Palestine beginning 1 B.C.E. through its expansion into the Roman Empire and ending at the schism between the Eastern Orthodox Church and the Western Catholic Church in the 1054 C.E.

Prerequisites:..WR-232, grade "C" or better

WR-236: African American Religious Experience and Expression   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Examines the African American religious experience and expression in America. Explores the historical, social, political, and economic factors which participated in the design of the African American church, considering African American theology, worship styles, sacred music, and the pivotal model of the African American pastor.

Prerequisites:..ENG-131, grade "C" or better

WR-237: Buddhism   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Explores the history, development, theology and practices of the religious traditions of Buddhism. Provides an introduction to the role of 'The Buddha' and his teachings. Special attention is paid to the Four Noble Truths, The Three Jewels, The Three Baskets, and the evolution of Theravada Buddhism and Mahayana Buddhism. Describes the relationship of Buddhism to modern societies and the impact of Buddhism upon Euro-American culture.

Prerequisites:..WR-233, grade "C" or better

WR-238: Hinduism   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Introduces and explores the history, and core beliefs, practices, and experiences of Hinduism. Emphasizes the range of diverse ideas, values, and practices within Hinduism.

Prerequisites:..WR-233, grade "C" or better

WR-239: Introduction to Daoism   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Introduces key developments in Daoist practice. Provides a brief sketching of the cultural context of late ancient China (900BCE – 90CE), including some biography regarding the scholars Lao-tzu, Chuang-tzu, and Confucius (700BCE – 300BCE). Also examines the modern appeal of Daoism in the western United States and beyond, including rituals, disciplines, and some theology. To accomplish both the context goals and the understanding of practice, course work compares and contrasts Daodeching and Chuang-tzu with the more familiar aphoristic writing of Marcus Aurelius in order to locate the value of this ancient faith by contrasting it with something that is suitably similar and more familiar in terms of presentation.

Prerequisites:....................................WR-130 or WR-131, grade "C" or better

WR-240: Myths and Symbols: Deciphering the Messages of Sacred Traditions   SSAF C

Credit Hours:..3.00

Contact Hours:...3.00

Introduces the academic study of religious myths. Examines spiritual and religious perspectives of cultures as sources of myths. Analyzes symbols, themes, and plots, enabling the student to identify common characteristics and patterns in myths originating in various cultures and religions throughout human history.

Prerequisites:....................................WR-130 or WR-131, grade "C" or better

Courses

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WR-241: Islam   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Introduces and explores the history, beliefs, practices, and experiences of Islam. Examines Islam starting from its origins discussing the life and times of the Prophet Muhammad, the Quran, and the further development of Muslim beliefs, way of life, and traditions to the present.

Prerequisites:...WR-232, grade "C" or better

WR-242: Native American Religious Traditions   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Introduces students to the spiritualities, religions, histories, and current challenges faced by various Native American peoples. Most, if not all, current challenges impinge upon or directly relate to issues of religious concern to Native communities. Major ideas concerning belief systems, myth, ritual, and art—all of which are important ways that religious concepts are shared and practiced—will be explored.

Prerequisites:....................................WR-130 or WR-131, grade "C" or better

WR-280: Topics in Religious Studies   **SSAF** **C**

Credit Hours:..3.00

Contact Hours:..3.00

Special topics course offerings are available in Religious Studies. Topics may vary. Additional course details, including any prerequisites, may be obtained from the current semester's class schedule or through the social Science, Arts, and Fitness Division office. Religious Studies topics courses may be taken up to two times for credit, six credit hour hours maximum, but the topics for each course must be different.

Prerequisites:....................................WR-130 or WR-131, grade "C" or better

WR-295: Directed Study in Religious Studies   **SSAF**

Credit Hours:...1.00

Contact Hours:..0.93

Offers students the opportunity to study a particular topic or issue in greater depth, working individually with a Religious Studies instructor. Students will learn methodologies of the discipline, such as the use of primary sources or source criticism, applying those to a particular topic selected by the student and approved by the instructor.

Prerequisites:..WR-131, one other WR course, both with a "C" grade or better, and instructor permission

WR-296: Directed Study in Religious Studies   **SSAF**

Credit Hours:..2.00

Contact Hours:..2.00

Offers students the opportunity to study a particular topic or issue in greater depth, working individually with a Religious Studies instructor. Students will learn methodologies of the discipline, such as the use of primary sources or source criticism, applying those to a particular topic selected by the student and approved by the instructor.

Prerequisites:..WR-131, one other WR course, both with a "C" grade or better, and instructor permission

WR-297: Directed Study in Religious Studies   **SSAF**

Credit Hours:..3.00

Contact Hours:..3.00

Offers students the opportunity to study a particular topic or issue in greater depth, working individually with a Religious Studies instructor. Students will learn methodologies of the discipline, such as the use of primary sources or source criticism, applying those to a particular topic selected by the student and approved by the instructor.

Prerequisites:..WR-131, one other WR course, both with a "C" grade or better, and instructor permission

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and Conference Center
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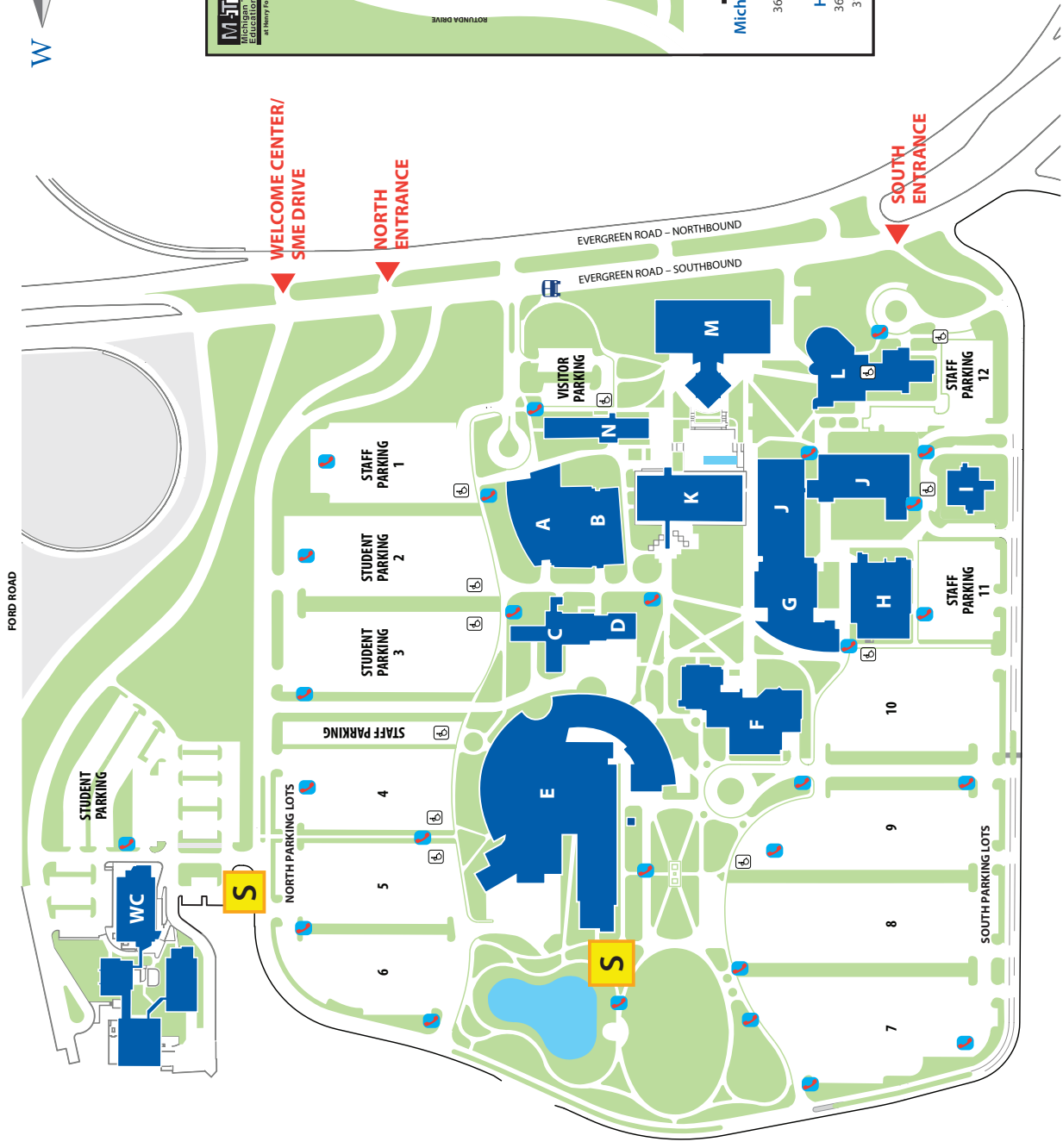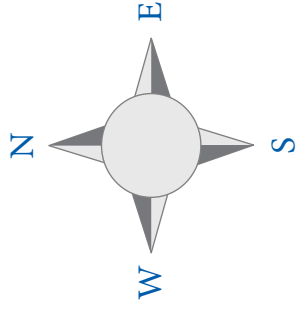
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