

Secondary Articulation Agreement

Part A (To be completed by Secondary CTE Instructor or Administrator.)

District / High School / Career Center	Dearborn Public Schools		
Secondary Program Title:	Computer Programming/Programmer	CIP Code:	11.0201
Name and Title of Secondary Contact:	Adam Martin, Executive Director of Student Achievement		
Mailing Address:	18700 Audette	Dearborn	MI 48124
	Street & Office Number	City	State & Zip
Office Phone:	313	827-3024	Email: martina@dearbornschools.org
	Area Code	Number	

Part B (To be completed by HFC Instructor, Dean, Associate Dean or Administrator.)

HFC Program Title:	Computer Information Systems	CIP Code:	11.0103
Date of Agreement:	March 1, 2022		
Agreement Period:	5 Years 3 Year Course Content Review		
*Expiration Date:	March 1, 2027		

*For the purposes of students enrolling and receiving articulated credit, this agreement remains effective for three (3) additional years after the expiration date. This will allow students who completed the secondary program during the agreement period to finalize the agreed upon requirements and receive articulated credit.

Purpose: The purpose of this agreement is to facilitate the transition of students from the above-named high school Career and Technical Education program to the aligned Associate Degree Program or Career and Technical Education Program at Henry Ford College (HFC). Academic credit is awarded for course requirements of the HFC certificate or degree program based on the completion of equivalent courses in the above named program at the recognized secondary institution.

General Terms and Conditions: An articulation agreement established with the College shall not exceed five (5) years in duration. Students requesting articulated credit shall satisfy the conditions and requirements as stated in this agreement within three (3) years after their termination of student status at the secondary institution. Any request received after that period shall be subject to approval by the appropriate HFC instructor and dean. Credit will be awarded as specified under the "Program Specific Terms, Conditions, and Requirements" of this agreement. Students shall be responsible for initiating the process to receive articulated credit as specified by this agreement by submitting a completed "Student Application for Articulated Credit" form. Credit granted beyond HFC is at the sole discretion of the transferring institution accepting credit.

Revisions and Renewals: This agreement shall be reviewed annually by both parties or at such time that substantive program changes occur within the HFC or the secondary program. Revisions and renewals must be in writing and agreed to by both parties before any modifications are made to this agreement. **Contact: Brandon Nowak, Articulation Agreement Manager** bnowak1@hfcc.edu

Secondary Articulation Agreement Program Specific Terms, Conditions, and Requirements

Part C (To be completed by HFC Instructor, Dean, Associate Dean or Administrator.)

HFC Program Title: Computer Information Systems **CIP Code:** 11.0103

(The space below is used by HFC instructors, Faculty Chair or Administrators to specify secondary articulation agreement terms, conditions, and requirements for the above program.)

1. Students must achieve a "C" or better average for each applicable class taken at Dearborn Public Schools/Dearborn High School that may apply to the specified program at Dearborn Public Schools/Dearborn High School.
2. Students must have demonstrated a good/satisfactory attendance record for the course/program at Dearborn Public Schools/Dearborn High School.
3. Students from Dearborn Public Schools/Dearborn High School must demonstrate competency in each course, for which HFC will grant articulated credit, as determined by HFC Faculty.
4. The secondary articulation agreement is predicated on relevant course/program curriculum submitted by Dearborn Public Schools/Dearborn High School and reviewed/evaluated by HFC Staff.
5. Secondary articulated credit will be held in escrow for:
 CIS 125 Principles of Programming Logic 4 CR
 CIS NCE CIS Program Elective Credit 3 CR
6. To receive secondary articulated credit for CIS 125, the student must achieve a score of 4 or above on the [College Board](#) AP Computer Science A exam.
7. To receive secondary articulated credit for CIS NCE, the student must achieve a score of 4 or above on the [College Board](#) AP Computer Science Principles exam.

Credit granted beyond HFC is at the sole discretion of the transferring institution accepting credit.

Secondary Instructor or Administrator Name and Title:

Adam Martin

Printed Name

Executive Director of Student Achievement

Printed Title

Authorizing Signatures:



Secondary Instructor or Administrator

2.28.2022

Date

David Maier, Ph.D.

Digital Signature 02/24/2022 2:56pm

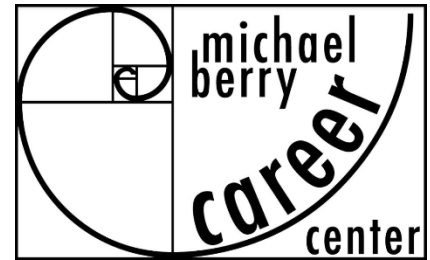
HFC Instructor, Faculty Chair or Administrator

2/24/2022

Date



2021-2022 SYLLABUS
11.0201 Computer Programmer/Programmer
PSN:20705
AP Computer Science A
Teacher: KIMBERLY A SHAWVER
AP Comp Sci A S1(616600TD)
AP Comp Sci A S2(626600TD)
 Michael Berry Career Center
 22586 Ann Arbor Trail
 Dearborn Heights, MI 48127
www.berry.dearbornschools.org
 (313) 827-4800



The Computer Programmer/Programmer program at the Michael Berry Career Center (MBCC) Programming course is a two-year CTE two course sequence consisting of AP Computer Science Principles and AP Computer Science that prepares students for entry level employment and/or post-secondary studies in programming careers including but not limited to:

- Programming
- Software Development
- Web Design
- Engineering
- Science
- Telecommunications
- Network Systems
- Digital Communications
- Technology
- Mathematics

INSTRUCTIONAL STANDARDS

This program is aligned to the State of Michigan Career & Technical Education Standards for Computer Programmer / Programmer (CIP 11.0201). Detailed standards are available at the Michigan CTE Navigator Website under the “Resources” tab. Direct link: <http://ctenavigator.org/programs/program/59>

NO	Instructional Segment	Student Learning Outcome (Students will...)
1	Computer Programming Skills	Development and analyze algorithms and fundamental data structures, use logic and formal methods of coding
2	Searching and Sorting Algorithms	Understand when and how to perform a sequential search and a binary search. Be able to distinguish between selection, insertion, bubble, and merge sorts, as well as identify coding for each.
3	Multidimensional Arrays	Construct two dimensional arrays to store and organize objects and primitive data types
4	Dynamic Data Structures	Formulate dynamic ArrayLists to organize objects
5	Advanced Objected Oriented Concepts	Utilize polymorphism, inheritance, and recursion to promote code reuse and optimal designs
6	Unified Modeling Language (UML)	Utilize UML to visualize complex software programs
7	Program Development	Use Top-Down Design methodologies to design software systems.

GENERAL REQUIREMENTS:

The Computer Programmer/Programmer pathway is open to all Dearborn Public Schools students in grades 9-12th with an interest in the Technology and/or Engineering Pathway and/or specific career interests aligned to the course (based on

counselor input and approval). Excellent behavior, personal responsibility and attendance are expected. Reasonable accommodations can and will be made for students with IEPs and 504 plans as approved by case workers.

UNIFORMS AND MATERIALS:

No uniforms are required All other equipment including a working computing device with internet access, supplies and materials will be provided.

ARTICULATED CREDIT:

Students who successfully complete the Computer Programmer/Programmer sequence and earn a sufficient score on the AP Course Exam may earn college credit for their high school classes. Colleges and Universities publish required AP Exam score needed to earn credit. Finally, specific articulation agreements are currently being negotiated with HFC.

RESOURCES:

- **Edhesive.com:** AP Computer Science A Course is an Amazon Future Engineer College Board approved curriculum for the AP Computer Science A course.
- **Textbook:** Big Java Early Objects & Java Software Solutions for AP Computer Science A
- **CodingBat:** Free online site of live coding problems to build coding skill in Java
- **RSI:** Free online site used to review for APCS A Exam
- **iLearn** is a Dearborn public schools computer based program where the students will view documents and announcements that are applicable to the lesson
- **Google Classroom** is another internet based application where students can access assignments and homework from their home computer.
- **Lab Desktop Computers.** Students will use Desktop Computers in the Computer Lab almost every day. Students will be assigned a computer to use and they will be held responsible to take care of that equipment and to notify me immediately if there is a problem with the equipment.
- **MiStar** is the district electronic attendance and gradebook system. Students and parents have access to this system through StudentConnect and ParentConnect. Parents- View your student's progress in my course by reviewing Parent Connect regularly - go to www.dearbornschools.org/parents to login.
- **Remind** is an open-source tool used by to communicate messages to/from students in a manner similar to texting without exchanging cell phone numbers. Free APP is available for download.

EVALUATIONS AND GRADING SCALE

A variety of methods will be used to evaluate student progress. Among the methods used are: class and homework assignments, quizzes, exams, class discussion, individual and group projects, programming projects, job shadowing or externship and a final exam.

The final grade is determined by 80% summative assessment; including exams, projects, programming projects, and written assignments The remaining portion of the final grade is 20% formative assessment which includes homework, projects, class work, quizzes and participation.

It is my desire to see all students succeed and to support you in your efforts to do so. If you put in the effort and follow the course expectations, you can succeed in this class. Point values that differ will be indicated at the time the assignment is given.

Formative assignments will not be accepted late unless there is an excused absence. Summative quizzes and tests will be made up on Mondays after schools.

Students should expect homework on a fairly regular basis. Homework is to be completed at home and brought finished to class or submitted online. Do not come to class expecting time to finish your homework during class. I do not accept late homework. Also, do not expect to finish homework during other classes.

Participation involves coming to class prepared, participating thoughtfully and respectfully in class discussions (speaking, listening, note-taking) and demonstrating the ability to work well with others.

Students will be graded using the following scale:

93-100%A

73-76.9%C *

90-92.9%A-
87-89.9%B+
83-86.9%B
80-82.9%B-
77-79.9%C+

70-72.9%C-
67-69.9%D+
63-66.9%D
60-62.9%D-
< 59.9% E

**Extra Credit

* Extra credit may be made available at the discretion of the instructor

* Extra credit will be limited to students who have made a consistent and concerted effort to fulfill all program requirements (grade in core content only)

REQUIRED COURSE COMPONENTS

Work Based Learning:

Students will be expected to participate in a Job Shadowing or Externship experience. Job Shadowing consists of at least 1 entire school day and Externships consist of 120 hours of after-school work in an appropriate and preapproved setting. The student will be required to find a site on their own, work with the site contact to complete the training agreement, obtain teacher and parent/guardian's signed permission, and provide their own transportation to and from the site. Upon completion of the field experience, the student will turn in an assignment and present to the class on their experience and assignment research. All work-based learning requirements must be completed by the end of the 4th card-marking. This assignment is worth the same number of points as a test.

Career and Technical Student Organization:

Students are required to participate in Hack Club/Girls Who Code (after school club/competitions for students in this career field) or other, pre-approved student leadership activity. There is no cost to attend. Students will be offered opportunities to compete in various competition, attend guest speaker presentations, and participate in a club community service project.

Group and Individual Projects:

Students will work in groups on a variety of programming tasks. The "Pair Programming" concept will be utilized throughout the year. Students will be assigned a task and a timer will be used to ensure that each member experiences all facets of working on a team to complete a project.

Resume, Cover letter and Interview:

Students will create an error-free Resume based on their current education and work/volunteer experience as well as a cover letter for a potentially desired position. They will participate in a mock interview for that desired position with their cover letter and resume geared to that position.

ATTENDANCE POLICY

- It is extremely important that you attend class on a daily basis. Your grade depends upon regular attendance and participation. Students are responsible for completing all work missed due to absences.
- Students with excused absences will receive the same number of days missed to make up assignments for full credit.
- Work assigned prior to an absence (including long-term/major projects/papers) – Work is due upon return from absence (For example- An assignment is given on Thursday and due on Monday. The student is absent on Monday. The student returns to school on Tuesday. The assignment must be turned in on Tuesday)
- Work assigned on date of an absence- One day grace period for each day missed (For example - Student is absent on Monday when a new assignment is given, which is due Tuesday. Student returns to school on Tuesday and obtains the missed assignment, which is now due on Wednesday.
- If you plan on being absent it is important to let your teacher know as well as myself for proper attendance tracking.

ACADEMIC INTEGRITY/CHEATING/PLAGIARISM

Definition - Copying or taking someone else's work (including copying from sources on the internet, such as Quizlet or copies of course worksheets) as well as allowing others to copy your work is considered plagiarism or cheating. This includes class worksheets, homework and tests.

Consequences- This will result in 0 points for that assignment for all students involved. This work cannot be made up or redone. In addition, parents, coaches, advisors, and school administration may be contacted and disciplinary action may be taken.

CELL PHONES AND FAMILY COMMUNICATION

Most high school students today have cell phones in order to communicate with parents regarding transportation and scheduling matters. We also know that cell phones can often be helpful educational tools, allowing students to review class PowerPoints or other online resources, conduct some research on various topics and create and use study aids such as flash cards. There will be times during class when students will be asked to use their phones for educational purposes. During these times, a sign in the classroom will indicate that phones are "ok." This means that students are allowed to use their phones for the assigned educational tasks only.

Students (and their family and friends) should only expect to use their phones for personal use before class begins and during breaks between classes. Except for the above-stated tasks, phones will be put away and not accessible to students during class time. As a result, family and friends should not anticipate being able to reach a student except during class passing times. ****YOU ARE NOT TO BE ON YOUR PHONES DURING YOUR SCHEDULED WORK BASED LEARNING ACTIVITIES****

If you have an emergency and must reach your student during class, please contact the school secretary. The student will be notified so that the situation can be addressed. If you need to get a non-emergency message to your student, please be aware that he/she will be able to receive your text and respond to it **ONLY** during passing time. It is crucial that we receive your support with this procedure as our goal is that time in school is dedicated to learning.

We follow the Michael Berry Career Center's Cell phone policy which states:

1. If a student is found to be in violation of this Cell Phone/Electronic Device Policy, the personal electronic device **WILL BE** confiscated by school personnel.
 - First Violation: The device will **ONLY** be returned to a parent/guardian at the end of the day/beginning of the next day.
 - Second Violation: The device will be **ONLY** be returned to a parent/guardian on the next Monday or Friday, which will be designated as cell phone pick up day (depending on when the incident took place).
 - Third Violation: The device will be kept by the school until the end of the school year/semester and must be picked up **ONLY** by the parent/guardian.
 - Fourth & Future Violations: The student will receive a disorderly conduct ticket issued by the Dearborn Police Department, where the parents must pay a fine in order to have the device returned to them.
2. If student and/or parent refuses to turn in the cell phone/electronic device, the incident will be considered insubordination and the following:
 - First Violation Refusal: Automatic one day suspension & parent meeting for the student to return
 - Second Violation Refusal: Automatic three-day suspension & parent meeting for the student to return
 - Third Violation Refusal: Automatic five-day suspension & parent meeting for the student to return

CLASSROOM/LAB EXPECTATIONS

- Follow the DPS Code of Conduct, and be mindful of the Core Values at all times.
- Follow classroom procedures, which will be presented during the first days of school. These include coming to class on time prepared to learn and being in your seat and working on bell work by the time class begins. Being prepared includes using the restroom before class. Permission to leave class will be given only in emergency situations. The goal is to use class time effectively and with minimal interruptions.
- Keep all outside items (food, drinks, electronics, etc.) from disturbing and disrupting your work and the work of others.
- Raise your hand to make a comment or ask a question. Do not yell out or mock your classmates. This is unacceptable and will not be tolerated.
- A student who is consistently disruptive or displays conduct unbecoming a professional environment will be dealt with following the progressive steps of discipline.

STUDENT EXPECTATIONS

- Students arrive on time to the classroom.
- Students will complete activities as assigned by the classroom teachers.
- Students will maintain confidentiality with all aspects of the classroom experience.
- Students will provide feedback regarding the course.
- Students will dress appropriately following the DPS dress code.
- Students will follow the Students Code of Conduct.
- Student will not use their cell phone during off site visits.
- Students will wear program uniform/ID Card as instructed

PROFESSIONAL BEHAVIOR EXPECTATIONS

Offsite activities are an extension of the high school classroom and, as such, all rules and regulations covered in the Secondary Student Code of Conduct are enforced. The use of cellular phones is prohibited during placement time. Students are a role-model as well as a representation of the profession and as such must also follow ALL placement site rules and regulations.

COURSE DESCRIPTION:

AP Computer Science A (616600D), 1-hour block (1.0 credit), Fall & Winter Semester (Full Year)

AP Computer Science A teaches students essential concepts of computer program analysis and design, using the object oriented programming language Java. This course is a hands on programming class, providing three to five hours of individual computer time to each student each week. Upon completion of this course, students will be able to develop appropriate programming solutions that use both standard and student written classes.

Student Learning Outcomes_(upon completion of this course students will be able to...)

- Computer Systems
 - Describe the relationship between hardware and software.
 - Define various types of software and how they are used.
 - Identify basic computer hardware and explain what it does.
 - Explain how the hardware components execute programs and manage data.
 - Describe how computers are connected together into networks to share information.
 - Explain the importance of the Internet and the World Wide Web.
 - Introduce concept of intellectual property, software pirating
 - Discuss ethical issues involving computers and networks, lab policy.
 - Introduce the Java Programming Language.
 - Describe the steps involved in program compilation and execution.
 - Identify errors as compile time, run time, or logic errors.
- Objects and Primitive Data
 - Define the difference between primitive data and objects.
 - Declare and use variables.
 - Perform mathematical computations.
 - Create objects and use them.
 - Explore the difference between a Java application and a Java applet.
- Program Statements
 - Discuss basic program development steps.
 - Define the flow of control through a program.
 - Learn to use if statements.
 - Define expressions that let us make complex decisions.
 - Learn to use while and for statements.
- Writing Classes
 - Define classes that act like blueprints for new objects, made of variables and methods.
 - Explain encapsulation and Java modifiers.

- o Explore the details of method declarations.
- o Review method invocation and parameter passing.
- o Explain and use method overloading.
- o Learn to divide complicated methods into simpler, supporting methods.
- o Describe relationships between objects.
- Enhancing Classes
 - o Define reference aliases.
 - o Explore passing object references as parameters.
 - o Learn to use the static modifier.
 - o Learn to use formal interfaces and their class implementations.
 - o Implement the Comparable interface
 - o Define nested classes and inner classes
- Arrays
 - o Define and Use Arrays
 - o Learn foreach processing.
 - o Describe how arrays and array elements are passed as parameters.
 - o Explore how arrays and other objects can be combined to manage complex information.
 - o Explore searching and sorting with arrays.
 - o Examine the ArrayList class.
- Inheritance
 - o Derive new classes from existing ones.
 - o Explain how inheritance supports software reuse.
 - o Add and modify methods in child classes.
 - o Discuss how to design class hierarchies.
 - o Define polymorphism and how it can be done.
- Recursion
 - o Explain the underlying ideas of recursion.
 - o Examine recursive methods and processing steps.
 - o Define infinite recursion and discuss ways to avoid it.
 - o Explain when recursion should and should not be used.
 - o Demonstrate the use of recursion to solve problems.
 - o Examine the use of recursion in sorting.

AP Credit & Certifications Available (students who earn a passing score on exam may receive the following)

- College Board AP Exam Score
- Precision Exams: *Computer Programmer 1A (820)*
- Precision Exams: *Computer Programmer 1B Java (82401)*
- Precision Exams: *Computer Programmer 11 Java (835)*

Course Outline

I. Object Oriented Class Design

A. Program and Class Design

1. Problem analysis
2. Data abstraction and encapsulation
3. Class specifications, interface specifications, relationships (“is-a,” “has-a”), and extension using inheritance

4. Code reuse
5. Data representation and algorithms
6. Functional decomposition

II. Program Implementation

A. Implementation techniques

1. Top-down
2. Bottom-up
3. Object-oriented
4. Encapsulation and information hiding
5. Procedural Abstraction

B. Programming Constructs

1. Primitive types vs. reference types
2. Declaration
 - a. Variables
 - b. Constants
 - c. Methods and parameters
 - d. Classes
 - e. Interfaces

3. Text output using System.out.print and System.out.println

4. Control

- a. Method call
- b. Sequential execution
- c. Conditional execution
- d. Iteration
- e. Recursion

5. Expression evaluation

- a. Numeric expressions
- b. String expressions
- c. Boolean expressions, short-circuit evaluation, De Morgan's law

III. Program Analysis

A. Testing

1. Development of appropriate test cases, including boundary cases
2. Unit testing
3. Integration testing

B. Debugging

1. Error categories: compile-time, run-time, logic
2. Error identification and correction
3. Techniques such as using a debugger, adding extra output statements, or hand-tracing code.

C. Runtime exceptions

D. Program correctness

1. Pre- and post-conditions
2. Assertions

E. Algorithm Analysis

1. Statement execution counts
2. Informal running time comparison

F. Numerical representations of integers

1. Representations of non-negative integers in different bases
2. Implications of finite integer bound

IV. Standard Data Structures

- A. Primitive data types (int, boolean, double)
- B. Strings
- C. Classes
- D. Lists
- E. Arrays (1-dimensional and 2-dimensional)

OPTIONAL CLASSES

n/a

RECOMMENDED ELECTIVES

- AP Statistics (614610D)
- AP Seminar (616621D)
- Software Specialist 1 (717500T)

- Software Specialist II-GIS (716271T)
- Design Concepts 2D (717091T)
- Digital Design Concepts 3D (717101T)
- Design Concepts II (717230T)

SUGGESTED ELECTIVES

The following Henry Ford College (HFC) classes are not required to complete the Computer Programmer/Programmer sequence, but may be beneficial to students based on the specific requirements of their chosen career-path and Educational Development Plan (EDP). Students should discuss these options with their counselors to ensure they are appropriate for students and will fit the student's schedule and graduation requirements.

- HFC CIS 126 HTML/CSS Programming (0.5 Credit), either Semester
- HFC CIS 130 C# Programming (0.5 Credit), either Semester
- HFC CIS 170 C Programming (0.5 Credit), either Semester
- HFC CIS 172 Javascript (0.5 Credit), either Semester
- HFC CIS 186 Game Programming(0.5 Credit), either Semester
- HFC CIS 230 C++ Programming (0.5 Credit), either Semester
- HFC CIS 232 Advanced C# Database Programming (0.5 Credit), either Semester

NOTICE OF NONDISCRIMINATION:

It is the policy of the Dearborn Public Schools not to discriminate on the basis of race, color, national origin, gender, age, disability, height, weight or marital status in its programs, services or activities. The following person has been designated to handle inquiries regarding the nondiscrimination policies: Hassane Jaafar, Director Curriculum & OCR, 18700 Audette, Dearborn, MI 48126, (313) 827-3181. Upon request to the school district superintendent, the district shall make reasonable accommodations for a person with disabilities to be able to participate in this program.

SYLLABUS AND EXPECTATIONS VERIFICATION

Welcome to Computer Programmer/Programmer! I am excited to have you in my class and I look forward to working with you this year. Please read the attached Syllabus and Course Expectations then return this form, signed by you and a parent or guardian. Should you have any questions regarding expectations, please contact me.

I, (print student name) _____, have read and understand the Course Syllabus and Course Policies and Expectations for my Computer Programmer/Programmer program. I understand what it is expected and I will follow all class and school policies. If I do not follow these policies I will be held accountable for my actions.

I will come to school and class on time and ready to learn.

I will complete my schoolwork as expected and participate in classroom activities.

I agree to ask for help when I do not understand

I know that I am the only person who can make me learn.

Student Signature

Date I,

(print parent name) _____ have reviewed this syllabus and I agree to subscribe to the teacher's blog and review ParentConnect regularly to monitor my student's progress.

Parent Signature

Date

Best parent phone number(s) to call: _____

Best Parent email address(es): _____



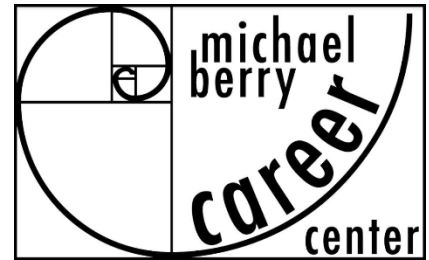
2021-2022 SYLLABUS

**11.0201 Computer Programmer/Programmer
PSN:20705**

**AP Computer Science Principles S1&S2
Teachers: KIMBERLY A SHAWVER &
PHILIP JOSEPH MCMULLEN**

**AP Comp Science Principles S1(616601TD)
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NO	Instructional Segment	Student Learning Outcome (Students will...)
1	Business Communication	Communicate professionally with others through verbal, non-verbal and/or written communication.
2	Ethics, legal, copyright, safety	Apply knowledge of law and persona/public ethics to guide positive decision making.
3	Career and Employability (entrepreneurship)	Demonstrate a willingness to learn. Students will learn how the career path in Computer Programming and Computer Science can lead to rewarding and satisfying jobs in the future.
4	Information Technology Fundamentals (C)	Compare the purpose and function of various public safety organizations and detail how they interact
5	Logic and Problem Solving (B)	Identify and fix syntax errors by observation and/or testing programs.
6	Beginning Application Development (E,F) (Coding)	Create variables, compound Boolean expressions, loops, array data structures, and/or list data structures.
7	Advanced Application Development (database, files) (J)	Understand top-down software design and bottom-up software development. Read input file and write output file data during execution of program.

8	Leadership and Teamwork	Participate actively as a team member. Work in collaborative settings to design and create program applications.
9	Programming Fundamentals and Syntax(D)	Understand the software development cycle and its four phases. Describe the concept of an event in computer programming. Demonstrate ability to create and work with functions and data structures
10	Needs Assessment /Project Planning(A,B)	Understand modular development and its benefits. Design Objects based on task requirements. Assess, and offer constructive suggestions for others' projects.
11	Debug and Software Testing(G) (Quality Assurance) (H)	Perform unit testing and integration testing.
12	Program Maintenance (I) (enhancements)	Describe the different types of software documentation and their appropriate uses.

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- **MiStar** is the district electronic attendance and gradebook system. Students and parents have access to this system through StudentConnect and ParentConnect. Parents- View your student's progress in my course by reviewing Parent Connect regularly - go to www.dearbornschools.org/parents to login.
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A variety of methods will be used to evaluate student progress. Among the methods used are: class and homework assignments, quizzes, exams, class discussion, individual and group projects, programming projects, job shadowing or externship and a final exam.

The final grade is determined by 80% summative assessment; including exams, projects, programming projects, and written assignments. The remaining portion of the final grade is 20% formative assessment which includes homework, projects, class work, quizzes and participation.

It is my desire to see all students succeed and to support you in your efforts to do so. If you put in the effort and follow the course expectations, you can succeed in this class. Point values that differ will be indicated at the time the assignment is given.

Formative assignments will not be accepted late unless there is an excused absence. Summative quizzes and tests will be made up on Mondays after schools.

Students should expect homework on a fairly regular basis. Homework is to be completed at home and brought finished to class or submitted online. Do not come to class expecting time to finish your homework during class. I do not accept late homework. Also, do not expect to finish homework during other classes.

Participation involves coming to class prepared, participating thoughtfully and respectfully in class discussions (speaking, listening, note-taking) and demonstrating the ability to work well with others.

Students will be graded using the following scale:

93-100%A	73-76.9% C *
90-92.9%A-	70-72.9% C-
87-89.9%B+	67-69.9% D+
83-86.9%B	63-66.9% D
80-82.9%B-	60-62.9% D-
77-79.9% C+	< 59.9% E

**Extra Credit

* Extra credit may be made available at the discretion of the instructor

* Extra credit will be limited to students who have made a consistent and concerted effort to fulfill all program requirements (grade in core content only)

REQUIRED COURSE COMPONENTS

Work Based Learning:

Students will be expected to participate in a Job Shadowing or Externship experience. Job Shadowing consists of at least 1 entire school day and Externships consist of 120 hours of after-school work in an appropriate and preapproved setting. The student will be required to find a site on their own, work with the site contact to complete the training agreement, obtain teacher and parent/guardian's signed permission, and provide their own transportation to and from the site. Upon completion of the field experience, the student will turn in an assignment and present to the class on their experience and assignment research. All work-based learning requirements must be completed by the end of the 4th card-marking. This assignment is worth the same number of points as a test.

Career and Technical Student Organization:

Students are required to participate in Hack Club/Girls Who Code (after school club/competitions for students in this career field) or other, pre-approved student leadership activity. There is no cost to attend. Students will be offered opportunities to compete in various competition, attend guest speaker presentations, and participate in a club community service project.

Group and Individual Projects:

Students will work in groups on a variety of programming tasks. The "Pair Programming" concept will be utilized throughout the year. Students will be assigned a task and a timer will be used to ensure that each member experiences all facets of working on a team to complete a project.

Resume, Cover letter and Interview:

Students will create an error-free Resume based on their current education and work/volunteer experience as well as a cover letter for a potentially desired position. They will participate in a mock interview for that desired position with their cover letter and resume geared to that position.

ATTENDANCE POLICY

- It is extremely important that you attend class on a daily basis. Your grade depends upon regular attendance and participation. Students are responsible for completing all work missed due to absences.
- Students with excused absences will receive the same number of days missed to make up assignments for full credit.
- Work assigned prior to an absence (including long-term/major projects/papers) – Work is due upon return from absence (For example- An assignment is given on Thursday and due on Monday. The student is absent on Monday. The student returns to school on Tuesday. The assignment must be turned in on Tuesday)
- Work assigned on date of an absence- One day grace period for each day missed (For example - Student is absent on Monday when a new assignment is given, which is due Tuesday. Student returns to school on Tuesday and obtains the missed assignment, which is now due on Wednesday.
- If you plan on being absent it is important to let your teacher know as well as myself for proper attendance tracking.

ACADEMIC INTEGRITY/CHEATING/PLAGIARISM

Definition - Copying or taking someone else's work (including copying from sources on the internet, such as Quizlet or copies of course worksheets) as well as allowing others to copy your work is considered plagiarism or cheating. This includes class worksheets, homework and tests.

Consequences- This will result in 0 points for that assignment for all students involved. This work cannot be made up or redone. In addition, parents, coaches, advisors, and school administration may be contacted and disciplinary action may be taken.

CELL PHONES AND FAMILY COMMUNICATION

Most high school students today have cell phones in order to communicate with parents regarding transportation and scheduling matters. We also know that cell phones can often be helpful educational tools, allowing students to review class PowerPoints or other online resources, conduct some research on various topics and create and use study aids such as flash cards. There will be times during class when students will be asked to use their phones for educational purposes. During these times, a sign in the classroom will indicate that phones are "ok." This means that students are allowed to use their phones for the assigned educational tasks only.

Students (and their family and friends) should only expect to use their phones for personal use before class begins and during breaks between classes. Except for the above-stated tasks, phones will be put away and not accessible to students during class time. As a result, family and friends should not anticipate being able to reach a student except during class passing times. ****YOU ARE NOT TO BE ON YOUR PHONES DURING YOUR SCHEDULED WORK BASED LEARNING ACTIVITIES****

If you have an emergency and must reach your student during class, please contact the school secretary. The student will be notified so that the situation can be addressed. If you need to get a non-emergency message to your student, please be aware that he/she will be able to receive your text and respond to it **ONLY** during passing time. It is crucial that we receive your support with this procedure as our goal is that time in school is dedicated to learning.

We follow the Michael Berry Career Center's Cell phone policy which states:

1. If a student is found to be in violation of this Cell Phone/Electronic Device Policy, the personal electronic device **WILL BE** confiscated by school personnel.
 - First Violation: The device will **ONLY** be returned to a parent/guardian at the end of the day/beginning of the next day.
 - Second Violation: The device will be **ONLY** be returned to a parent/guardian on the next Monday or Friday, which will be designated as cell phone pick up day (depending on when the incident took place).
 - Third Violation: The device will be kept by the school until the end of the school year/semester and must be picked up **ONLY** by the parent/guardian.
 - Fourth & Future Violations: The student will receive a disorderly conduct ticket issued by the Dearborn Police Department, where the parents must pay a fine in order to have the device returned to them.

2. If student and/or parent refuses to turn in the cell phone/electronic device, the incident will be considered insubordination and the following:
 - First Violation Refusal: Automatic one day suspension & parent meeting for the student to return
 - Second Violation Refusal: Automatic three-day suspension & parent meeting for the student to return
 - Third Violation Refusal: Automatic five-day suspension & parent meeting for the student to return

CLASSROOM/LAB EXPECTATIONS

- Follow the DPS Code of Conduct, and be mindful of the Core Values at all times.
- Follow classroom procedures, which will be presented during the first days of school. These include coming to class on time prepared to learn and being in your seat and working on bell work by the time class begins. Being prepared includes using the restroom before class. Permission to leave class will be given only in emergency situations. The goal is to use class time effectively and with minimal interruptions.
- Keep all outside items (food, drinks, electronics, etc.) from disturbing and disrupting your work and the work of others.
- Raise your hand to make a comment or ask a question. Do not yell out or mock your classmates. This is unacceptable and will not be tolerated.
- A student who is consistently disruptive or displays conduct unbecoming a professional environment will be dealt with following the progressive steps of discipline.

STUDENT EXPECTATIONS

- Students arrive on time to the classroom.
- Students will complete activities as assigned by the classroom teachers.
- Students will maintain confidentiality with all aspects of the classroom experience.
- Students will provide feedback regarding the course.
- Students will dress appropriately following the DPS dress code.
- Students will follow the Students Code of Conduct.
- Student will not use their cell phone during off site visits.
- Students will wear program uniform/ID Card as instructed

PROFESSIONAL BEHAVIOR EXPECTATIONS

Offsite activities are an extension of the high school classroom and, as such, all rules and regulations covered in the Secondary Student Code of Conduct are enforced. The use of cellular phones is prohibited during placement time. Students are a role-model as well as a representation of the profession and as such must also follow ALL placement site rules and regulations.

COURSE DESCRIPTION:

AP Computer Science Principles (616601D), 1-hour block (1.0 credit) Fall & Winter Semester (Full Year)

AP[®] Computer Science Principles Code.org's Computer Science Principles (CSP) curriculum is a full year, rigorous, entry level course that introduces high school students to the foundations of modern computing. The course covers a broad range of foundational topics such as programming, algorithms, the Internet, big data, digital privacy and security, and the societal impacts of computing.

Student Learning Outcomes (upon completion of this course students will be able to...)

Computing affects almost all aspects of modern life and all students deserve a computing education that prepares them to pursue the wide array of intellectual and career opportunities that computing has made possible. This course is not a tour of current events and technologies. Rather, this course seeks to provide students with a "future proof" foundation in computing principles so that they are adequately prepared with both the knowledge and skills to live and meaningfully participate in our increasingly digital society, economy, and culture.

The Internet and Innovation provide a narrative arc for the course, a thread connecting all of the units. The course starts with learning about what is involved in sending a single bit of information from one place to another and ends with

students considering the implications of a computing innovation of their own design. Along the way students learn:

- How the Internet works and its impacts on society.
- How to program and rapidly prototype small JavaScript applications both to solve problems and to satisfy personal curiosity.
- How to collect, analyze and visualize data to gain insight and knowledge.
- How to evaluate the beneficial and harmful effects to people and society brought on by computing innovations.

AP Credit & Certifications Available (students who earn a passing score on exam may receive the following)

- College Board AP Exam Score
- Precision Exams: *Computer Programmer 1A (820)*

Course Outline

- I. The Internet
 - a. Representing and Transmitting Info
 - i. Sending Binary Messages
 - ii. Encoding and Sending Numbers
 - iii. Encoding and Sending Text
 - b. Inventing the Internet
 - i. IP Addresses, Packets, and Redundancy
 - ii. Routing, DNS, Protocols, and Abstraction
 - iii. Practice PT: The Internet and Society
- II. Digital Information
 - a. Encoding and Compressing Complex Info
 - i. Text Compression
 - ii. Encoding Images
 - iii. Practice PT: Encode an Experience
 - b. Manipulating and Visualizing Data
 - i. Interpreting Visual Data
 - ii. Communicating and Visualization
 - iii. Cleaning Data and Making Summary Tables
 - iv. Practice PT: Design a Digital Scene
- III. Algorithms & Programming
 - a. Programming Languages and Algorithms
 - i. Designing Algorithms
 - ii. Procedural Abstraction & Top Down Design
 - iii. Writing Functions
 - iv. Loops and Documentation
 - v. Practice PT: Design a Digital Scene
- IV. Big Data & Privacy
 - a. Implications of Big Data
 - i. Big Data in the Real World
 - ii. Identifying People and the cost of “free”
 - iii. Foundations of Encryption
 - iv. Asymmetric and Public Key Encryption
 - v. Prace PT: The Big Data Dilemma
- V. Building Apps
 - a. Event-Driven Programming
 - i. Designing Event-Driven Apps
 - ii. User Input and Variables
 - iii. Boolean logic and conditionals
 - iv. Practice PT: Digital Assistance

- b. Programming with Data Structures
 - i. While Loops
 - ii. Simulations
 - iii. Arrays
 - iv. Functions with return values
 - v. Processing Arrays
 - vi. Practice PT: Improve an App
- VI. Performance Tasks
 - a. Create Performance Task
 - i. Preparations: Create PT
 - ii. 12 hours - AP Performance Task: Create
 - b. Explore Performance Task
 - i. Preparation: Explore PT
 - ii. 8 hours - AP Performance Task: Explore
- VII. Data Tools
 - a. Manipulating and Visualizing Data
 - b. Apps and Databases

OPTIONAL CLASSES

n/a

RECOMMENDED ELECTIVES

- AP Statistics (614610D)
- AP Seminar (616621D)
- Software Specialist 1 (717500T)
- Software Specialist II-GIS (716271T)
- Design Concepts 2D (717091T)
- Digital Design Concepts 3D (717101T)
- Design Concepts II (717230T)

SUGGESTED ELECTIVES

The following Henry Ford College (HFC) classes are not required to complete the Computer Programmer/Programmer sequence, but may be beneficial to students based on the specific requirements of their chosen career-path and Educational Development Plan (EDP). Students should discuss these options with their counselors to ensure they are appropriate for students and will fit the student's schedule and graduation requirements.

- HFC CIS 126 HTML/CSS Programming (0.5 Credit), either Semester
- HFC CIS 130 C# Programming (0.5 Credit), either Semester
- HFC CIS 170 C Programming (0.5 Credit), either Semester
- HFC CIS 172 Javascript (0.5 Credit), either Semester
- HFC CIS 186 Game Programming(0.5 Credit), either Semester
- HFC CIS 230 C++ Programming (0.5 Credit), either Semester
- HFC CIS 232 Advanced C# Database Programming (0.5 Credit), either Semester

NOTICE OF NONDISCRIMINATION:

It is the policy of the Dearborn Public Schools not to discriminate on the basis of race, color, national origin, gender, age, disability, height, weight or marital status in its programs, services or activities. The following person has been designated to handle inquiries regarding the nondiscrimination policies: Hassane Jaafar, Director Curriculum & OCR, 18700 Audette, Dearborn, MI 48126, (313) 827-3181. Upon request to the school district superintendent, the district shall make reasonable accommodations for a person with disabilities to be able to participate in this program.

SYLLABUS AND EXPECTATIONS VERIFICATION

Welcome to Computer Programmer/Programmer! I am excited to have you in my class and I look forward to working with you this year. Please read the attached Syllabus and Course Expectations then return this form, signed by you and a parent or guardian. Should you have any questions regarding expectations, please contact me.

I, (print student name) _____, have read and understand the Course Syllabus and Course Policies and Expectations for my Computer Programmer/Programmer program. I understand what it is expected and I will follow all class and school policies. If I do not follow these policies I will be held accountable for my actions.

I will come to school and class on time and ready to learn.

I will complete my schoolwork as expected and participate in classroom activities.

I agree to ask for help when I do not understand

I know that I am the only person who can make me learn.

Student Signature

Date I,

(print parent name) _____ have reviewed this syllabus and I agree to subscribe to the teacher's blog and review ParentConnect regularly to monitor my student's progress.

Parent Signature

Date

Best parent phone number(s) to call: _____

Best Parent email address(es): _____