Computer Programming I

Career Cluster	Information Technology
Course Code	10152
Prerequisite(s)	Computer Applications, Introduction to Information Technology Careers (recommended), Computer Hardware & Software (recommended)
Credit	.5-1
Program of Study and Sequence	Computer Programming or a dual credit equivalent is in the Programming Pathway and the Networking & Hardware Pathway
Student Organization	SkillsUSA, Future Business Leaders of America (FBLA), CyberPatriots
Coordinating Work-Based Learning	Job Shadowing, Tours, Informational Interviews, Internships
Industry Certifications	None
Dual Credit or Dual Enrollment	TBD
Teacher Certification	Information Technology Cluster Endorsement; Programming & Software Development Pathway Endorsement; Engineering & Robotics Pathway Endorsement; K-12 Educational Technology Endorsement; K-12 Classroom Technology
Resources	

Course Description:

Computer Programming I introduces students to the fundamentals of computer programming. Students will learn to design, code, and test their own programs while applying mathematical concepts. Teachers introduce concepts and problem-solving skills through a programming language such as C, C++, C#, Java, Python, or Visual Basic. Computer Programming II reviews and builds on the concepts introduced in Computer Programming I and introduces students to more complex data structures. Topics include sequential files, arrays, and classes.

Program of Study Application

Computer Programming is required for the Programming Pathway and recommended for the Networking & Hardware Pathway.

Course Standards

INDICATOR # CP 1. Identify and use a programming environment.

Webb Level	Sub-Indicator	Integrated Content
Level 1: Recall	CP 1.1 Demonstrate knowledge of software concepts.	
Level 2: Skill/Concept	CP 1.2 Demonstrate the ability to compile, debug, and execute programs.	

INDICATOR # CP 2. Employ standard conventions for creation and design of a software program.

Webb Level	Sub-Indicator	Integrated Content
Level 2: Skill/Concept	CP 2.1 Demonstrate the ability to use a standard programming style.	
Level 2: Skill/Concept	CP 2.2 Recognize software development processes.	
Level 1: Recall	CP 2.3 Identify the syntactical components of a program.	

INDICATOR # CP 3. Properly use language-fundamental commands and operations.

Webb Level	Sub-Indicator	Integrated Content
Level 2: Skill/Concept	CP 3.1 Demonstrate the ability to use basic elements of a specific language.	
Level 2: Skill/Concept	CP 3.2 Employ basic arithmetic expressions in programs.	

Level 3: Strategic Thinking	CP 3.3 Demonstrate the ability to use data types in programs.	
Level 2: Skill/Concept	CP 3.4 Incorporate functions/methods.	

INDICATOR # CP 4. Apply control structures.

Webb Level	*Sub-Indicator*	*Integrated Content*
Level 2: Skill/Concept	CP 4.1 Demonstrate the ability to use relational and logical operators in programs.	
Level 3: Strategic Thinking	CP 4.2 Investigate conditional statements.	
Level 3: Strategic Thinking	CP 4.3 Implement loops in programs.	

INDICATOR # CP 5. Explore career opportunities in programming.

Webb Level	*Sub-Indicator*	*Integrated Content*
Level 1: Recall	CP 5.1 Identify personal interests and abilities related to Computer Programming/Software Engineering careers.	
Level 3: Strategic Thinking	CP 5.2 Investigate career opportunities, trends, and requirements related to computer programming/software engineering careers.	
Level 2: Skill/Concept	CP 5.3 Demonstrate job skills for programming industries.	

Proposed 2020-2021