

Computer Programming I

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| 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**

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|  **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. |  |
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|  **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. |  |
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|  **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. |  |
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|  **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. |  |
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|  **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. |  |