Advanced Computer Programming

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 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:

Advanced Computer Programming 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 in the Programming Pathway and the Networking & Hardware Pathway.

Course Standards

INDICATOR # ACP 1. Utilize problem solving skills in a programming environment.		
Webb Level	*Sub-Indicator*	*Integrated Content*

Level 3: Strategic Thinking	ACP 1.1 Demonstrate the ability to compile, apply problem solving to debugging and executing programs.	
INDICATOR # ACP 2 Employ advanced conventions for creation and design of a software program.		
Webb Level	*Sub-Indicator*	*Integrated Content*
Level 3: Strategic Thinking	ACP 1.1 Demonstrate the ability to compile, apply problem solving to debugging and executing programs.	
Level 3: Strategic Thinking	ACP 2.2 Examine software development processes.	
Level 2: Skill/concept	ACP 2.3 Implement the syntactical components of a program.	
INDICATOR # ACP 3 Properly use language-fundamental commands and operations independently.		
Webb Level	*Sub-Indicator*	*Integrated Content*
Level 3: Strategic Thinking	ACP 3.1 Demonstrate the ability to use basic elements of a specific language.	
Level 3: Strategic Thinking	ACP 3.2 Employ basic arithmetic expressions in programs.	
Level 3: Strategic Thinking	ACP 3.3 Demonstrate the ability to use data types in programs.	
Level 3: Strategic Thinking	ACP 3.4 Incorporate functions/methods.	

INDICATOR # ACP 4. Apply control structures.		
Webb Level	*Sub-Indicator*	*Integrated Content*
Level 3: Strategic Thinking	ACP 4.1 Demonstrate the ability to use relational and logical operators in programs.	
Level 4: Extended Thinking	ACP 4.2 Investigate conditional statements.	
Level 4: Extended Thinking	ACP 4.3 Implement loops in programs.	
INDICATOR # ACP 5. Integrate arrays.		
Webb Level	*Sub-Indicator*	*Integrated Content*
Level 2: Skill/Concept	ACP 5.1 Demonstrate the ability to use arrays in programs.	
Level 3: Strategic Thinking	ACP 5.2 Demonstrate the ability to use strings in programs.	
INDICATOR # ACP 6. Implement object-oriented programming techniques.		
Webb Level	*Sub-Indicator*	*Integrated Content*
Level 3: Strategic Thinking	ACP 6.1 Demonstrate the ability to use existing classes.	
Level 4: Extended Thinking	ACP 6.2 Demonstrate the ability to create user-defined classes.	

Level 4: Extended Thinking	ACP 6.3 Demonstrate proper design principles with classes.	