Computer Science CTE Program

Career Tech Student Organization: SkillsUSA
Career Readiness Indicator Credential: Information Technology Specialist - Python

Programming Foundations

Course Code: 10152G1001	1 Credit
Prerequisite: None; priority will be given to 10th and 11th Grade students	Course Fee: None

Programming Foundations focuses on the fundamentals of computer programming with an emphasis on computational thinking and problem-solving. Students will create authentic artifacts and engage with programming as a medium for creativity, communication, problem-solving, and fun. Students will be expected to develop logical thinking skills that pertain to programming. This course extends the standards of the Alabama Course of Study: Digital Literacy and Computer Science.

Object-Oriented Programming I (Python)

Course Code: 10152G1003	1 Credit
Prerequisite: Information Technology Fundamentals, Programming Foundations or Exploring Computer Science	Course Fee: None

Object-Oriented Programming I (Python) is designed to provide students with an understanding of object-oriented programming concepts (classes and objects) that are used to structure a software program using reusable pieces of code. After being introduced to basic programming terminology, students will learn to program the Python language, acquiring an understanding of data types, functions, conditional statements, loops, etc., as well as program documentation, program design and development, and debugging. Good programming techniques will be stressed.

Computer Science Principles, AP

Course Code: 10019E1000	1 Credit
Prerequisite: Geometry and Algebra I	Exam Fee: $110

AP Computer Science Principles is equivalent to a first-semester, college-level breadth course, which follows the curriculum established by the College Board Advanced Placement (AP) program for computer science. AP Computer Science Principles introduces students to the breadth of the field of computer science. In this course, students will learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. They will incorporate abstraction into programs and use data to discover new knowledge. Students will also explain how computing innovations and computing systems, including the Internet, work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical. The AP Computer Science Principles Exam is required and will be administered in May.

Computer Science A, AP	
Course Code: 10157E1000	1 Credit
Prerequisite: Algebra II w/ Stats	Exam Fee: $110

AP Computer Science A is equivalent to a first-semester, college-level course in computer science. This course introduces students to computer science with fundamental topics that include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language. The AP Computer Science A Exam is required and will be administered in May.