CSCI 1250  
Introduction to Computer Science I

Credit Hours: 4
Contact Hours: 4

Course Coordinator: Gene Bailey

Text(s):

Catalog Description:

Introduction to all aspects of the programming and problem-solving process and the elements of good programming style. A high-level language is used as a vehicle for introducing these concepts. Laboratory use of the computer in designing, coding, debugging, and executing programs is an integral part of the course.

Prerequisite(s): Pass or taking CSCI 1100 and MATH 1720 or two years of high school algebra

CS: REQUIRED  
IS: REQUIRED  
IT: REQUIRED

Course Outcomes:

Explain the software development life cycle: requirements analysis and specification, design, implementation, testing, and maintenance - ETSU Outcome 5a; ABET Outcomes b, c, CS-k, IT-n

Develop an object-oriented design - ETSU Outcomes 4b, 5c; ABET Outcomes b, c, CS-k, IT-m

Program in Java, an object-oriented programming language - ETSU Outcomes 4, CS-2; ABET Outcomes c, CS-k, IT-j

Describe the qualities of good programming style and use good programming style in his or her programs - ETSU Outcomes 4b, 5c, CS-2; ABET Outcomes b, c, CS-k

Understand and discuss ethical and professional issues in the use of computers and the impact of computers on society - ETSU Outcome: 2a; ABET Outcomes e, e.1, e.2
Major Topics:

- Computer organization - hardware components and software components
- Programming languages: machine language, assembly language, high-level language, and the translation process
- Phases of the Software Life Cycle
- Introduction to algorithms
- Input-Processing-Output
- Introduction to the java development environment
- Programming logic: Sequential, Selection, Repetition
- Overall structure of Java programs
- Identifiers, variables, data types, assignment of values
- Interactive input and output
- Arithmetic operators
- Methods
- Introduction to objects and classes
- Class declaration and class definition
- Object implementation and instantiation
- UML diagramming
- Encapsulation
- Application of ethical principles in creation of software
- Documentation and programming standards
- Testing and debugging