Computer Science 110 2023-24 K. MacDonald

Computer Science 110 serves as an introductory course in computer programming using Code.org website and Python 3 programming language. This course will prepare students to take further programming courses in high school, university, or community college.

GCO 1: Students will demonstrate operational skills specific to computer science.
Students will:
S.C.O. 1.1 persevere and demonstrate resourcefulness when challenges arise during a project
S.C.O. 1.2 articulate challenges and hypothesize solutions to complete projects
S.C.O. 1.3 use team-based project management strategies during collaborative efforts
S.C.O. 1.4 apply the fundamentals of digital technology in relation to coding and computer Science

GCO 2: Students will use computational thinking skills to analyze challenges and create and evaluate solutions.
Students will:
S.C.O. 2.1 break a problem or challenge down into manageable pieces (abstraction)
S.C.O. 2.2 create repeatable solutions to the manageable pieces (algorithms and automation)
S.C.O. 2.3 represent, collect, and manage data to accomplish a task (data representation)
S.C.O. 2.4 analyze data and identify patterns by using algorithms (algorithms and analysis)
S.C.O. 2.5 execute a solution and evaluate the solutions validity and effectiveness (evaluation)

GCO 3: Students will develop coding skills.
Students will:
S.C.O. 3.1 analyze, create, and evaluate code containing input and output data and variables
S.C.O. 3.2 analyze, create, and evaluate code containing loops
S.C.O. 3.3 analyze, create, and evaluate code containing conditional statements
S.C.O. 3.4 use abstraction in creating code
S.C.O. 3.5 create understandable code with helpful names and efficient comments
S.C.O. 3.6 analyze, create, and evaluate accompanying documentation

Topics to be Covered:

- Computing Environment and Systems
    - History of Computers
    - Hardware
    - Software

    - External devices
    - Programming Languages
- Programming Concepts and Skills
    - Data Types
    - Arrays
    - Loops
    - Variables
    - Conditional Statements
    - Debugging
- Software Development
    - Problem Solving Strategies
    - Design Algorithms
    - Documentation
- Careers in Computer Science

EVALUATION

GCO 1: 10 %
GCO 2: 10 %
GCO 3: 50 %

Exam 30%