Computer Science
Course Overview and Syllabus

Course Number: EL5722

Grade level: 6-10

Prerequisite Courses: None

Credits: 0.5

Course Description

Computer Science introduces students to the basics of com-puter science through a series of Python® programming projects that encourage creativity and experimentation. Students create a diverse portfolio of projects as they learn commands and functions, values and variables, Graphical User Interface, modular and object-oriented programming, and events and event-driven processes. Students learn loops, debugging techniques and software development processes including iterative and incremental models. Students explore careers in programming, including profiles from a wide variety of programming professionals.

Course Objectives

Throughout the course, you will meet these goals:

- Python (command line) window, shell, and IDLE text editor
- Programming languages
- Python's turtle program
- Turtle
- Modules
- Commands
- Functions
- Variables
- Values
- Operators
- Loops
- Commenting
- Coordinates and grids
- Events
- Bugs and debugging techniques
- Interactivity
- Graphical user interfaces

- Software development
- Open source software
- Manipulating strings and lists
- Slicing, striding, and concatenating
- Help systems
- Careers in computer programming

Student Expectations

This course requires the same level of commitment from you as a traditional classroom course would. Throughout the course, you are expected to spend approximately 5–7 hours per week online on the following activities:

- Interactive lessons that include a mixture of instructional segments and tasks
- Assignments in which you apply and extend learning in each lesson
- Assessments including quizzes, tests, and cumulative exams

Communication

Your teacher will communicate with you regularly through discussions, email, chat, and system announcements. You will also communicate with classmates, either via online tools or face to face, as you collaborate on projects, ask and answer questions in your peer group, and develop your speaking and listening skills.

Grading Policy

You will be graded on the work you do online and the work you submit electronically to your teacher. The weighting for each category of graded activity is listed below.

Grading Category	Weight
Assignments	20%
Essays	0%
Labs	0%
Lesson Quizzes	20%
Unit Tests	10%
Cumulative Exams	0%
Projects	50%

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Scope and Sequence

When you log into Edgenuity, you can view the entire course map—an interactive scope and sequence of all topics you will study. The units of study are summarized below:

Project 1: Starting with Python: Write a program using Python's commands that draws two squares, a circle, and a triangle.

Project 2: Graphical Hello World: Create a program that uses coordinates, spaces, and functions to draw the letters in HELLO.

Project 3: Variables: Learn about values, variables, and operators, and set up a "turtle program" for users to input pen color and width.

Project 4: Loops: Learn about loops, change the angle of the turtle, draw new shapes, create multiple turtles, and change the look of the letters in HELLO.

Project 5: A Drawing Program: Learn about help centers, buttons, and events and create a program in which the mouse interacts with the turtle.

Project 6: Software Development: Learn about the stages in a software development process, plan projects, and write and test a program.

Project 7: Strings and Lists: Learn about strings and lists and manipulate a text file to count words and sentences, create lists, and list items in alphabetical order.