Fundamentals of Programming and Software Development
Course Overview and Syllabus

Grade level: 9–12

Prerequisite Courses: None   **Credits:** 0.5

Course Description

This semester-long course provides students with an understanding of basic software development concepts and practices, issues affecting the software industry, careers within the software industry, and the skills necessary to perform well in these occupations. Students learn details about core concepts in programming using Java, writing and debugging code, proper syntax, flow of control, order of operations, comparison operators, and program logic tools and models. Students learn the function of key program techniques including if statements, looping, and arrays, as well as web development using HTML and drag-and-drop development of user interfaces in an integrated development environment. Students explore the software development life cycle and different variations used to create software.

Course Objectives

Throughout the course, you will meet the following goals:

- Review the relationship between computer hardware and software
- Describe the purpose and high-level organization of the Central Processing Unit (CPU)
- Recognize the different categories of software and classify software products correctly
- Identify the functions of systems software
- Demonstrate an understanding of popular software applications
- Understand the function and operation of compilers and interpreters
- Discuss careers within the software industry and the skills needed to succeed

Student Expectations

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

- Interactive lessons that include a mixture of videos, readings, 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
Lesson Quizzes	20%
Unit Tests	20%
Cumulative Exams	20%
Assignments	10%
Projects	30%
Additional	0%

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:

Unit 1: Introduction to Computers
Unit 2: Java
Unit 3: Programming
Unit 4: Advanced Programming
Unit 5: GUI Programming and Web Applications

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