

# Software Development Tools

## Course Overview and Syllabus

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**Grade level:** 9–12

**Prerequisite Courses:** None

**Credits:** 0.5

### Course Description

This semester-long course introduces students to the variety of careers related to programming and software development. Students gather and analyze customer software needs and requirements, learn core principles of programming, develop software specifications, and use appropriate reference tools to evaluate new and emerging software. Students apply IT-based strategies and develop a project plan to solve specific problems and define and analyze system and software requirements.

### Course Objectives

Throughout the course, you will meet the following goals:

- Learn about the development of the computer and the organization of the Central Processing Unit (CPU)
- Demonstrate knowledge of widely used software applications, including word processing, database management, and spreadsheet development
- Analyze the differences between interpreted, translated, and compiled languages
- Describe how computers address data in memory
- Design structures, classes, and objects that include variables and methods
- Summarize how data is organized in software development
- Understand the standard primitive types and operations of the Java programming language
- Define and initialize Java arrays
- Demonstrate knowledge of the basics of structured, object-oriented language
- Write software applications using while, do while, for, and for-each loops
- Define logic statements using if, else if, else, and switch statements
- Develop an application using conditional statements
- Demonstrate knowledge of key constructs and commands specific to a language
- Develop applications that respond to user input

## 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 Software Development Tools
- Unit 2:** Software Development
- Unit 3:** Debugging
- Unit 4:** Software Configuration Management
- Unit 5:** Object Modeling UML and Software Testing