# Computer Science: Mobile App Development

**Industry Sector**
Information & Communication Technology

**Pathway**
Software & System Development

## 10th

**Standards-Based Curriculum**
Broad, foundational knowledge and skills that are common amongst careers in chosen pathway

**Career Awareness and Exploration**
Build awareness about the variety of careers available in chosen industry sector/pathway as well as explore career and post-secondary options whereby enableing students to make informed decisions in their high school and post-secondary education.

**Computer Science I**
Beginning level containing introductory concepts required to build foundational and general knowledge.

**Fall**
Computer Science I

**Spring**
CS 3A

**Introductory Work-Based Learning**
Guest Speakers, Job Shadowing, Project-based Learning, Informational Interviews, Workplace Tour

**Academic and Skills Assessments**
Ensuring students are acquiring technical, academic and employability skills - paper/pencil tests, teacher observations, rubric based assessments/projects, etc.

**Dual Enrollment and/or UC A-G Approved**

## 11th

**Standards-based Curriculum**
More challenging and in-depth academic and technical skills are developed.

**College & Career Preparation**
Employability skills required by employers (resumes, interviewing skills, etc.) as well as entrance requirements of partnering post-secondary institutions (SATs, ACTs, placement tests, etc)

**Computer Science II**
A CTE course beyond the introductory level that is intended to provide more in-depth instruction in and exploration of a specific industry sector.

**Fall**
CS 3B

**Spring**
CS 63A OR 64A

**Work-Based Learning - Career Preparation**
Mentor Program, Career Fair. Job Shadowing, Service Learning

**Academic and Skills Assessments**
Ensuring students are acquiring technical, academic and employability skills - paper/pencil tests, teacher observations, rubric based assessments/projects, etc.

**Dual Enrollment and/or UC A-G Approved**

## 12th

**Standards-based Curriculum**
Provides knowledge and skills required for entry and advancement in chosen career pathway.

**Capstone Project**
A culminating, multifaceted assessment for students to demonstrate learning from all courses in a pathway. Projects might be a research paper, a performance, a portfolio of "best work," or an exhibit of artwork.

**Computer Science III**
The final course in a planned sequence of courses that provides a rigorous and intensive culmination of a course of study.

**Fall**
CS 22A

**Spring**
Capstone Project

**Work-Based Learning - Career Training**
Internship, Apprenticeship, Clinical Expereience, Work Experience, On-the-job Training

**Academic and Technical Skills Assessment**
Employability skill certificates or a variety of specific occupational skill attainment measures (i.e. industry-recognized certifications) as well as SAT, ACT and/or state assessment scores.

**Dual Enrollment and/or UC A-G Approved**

**Industry-recognized Certification**
All CTE pathway students have the opportunity to achieve at least one industry-recognized certification that qualifies them for entry-level employment.

PCEP – Certified Entry-Level Python Programmer Certification

**Key**

Foothill Dual Enrollment

Industry Certification

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# Dual Enrollment Courses

## 10th Grade

**Spring: CS 3A Object-Oriented Programming Methodologies in Python, 4.5 units**
**Description:** Systematic introduction to fundamental concepts of computer science through the study of the Python programming language. Coding topics include control structures, functions, classes, string processing, lists, tuples, dictionaries, working with files, and elementary graphics. Concept topics include algorithms, recursion, data abstraction, problem solving strategies, code style, documentation, debugging techniques and testing.

## 11th Grade

**Spring - CS 3B Intermediate Software Design in Python, 4.5 units**
**Description:** Systematic treatment of intermediate concepts in computer science through the study of Python object-oriented programming (OOP). Coding topics include Python sequences, user-defined classes and interfaces, modules, packages, collection classes, threads, lambda expressions, list comprehensions, regular expressions and multi-dimensional arrays. Concept topics include OOP project design, recursion, inheritance, polymorphism, functional programming, linked-lists, FIFOs, LIFOs, event-driven parsing, exceptions and guarded code.

**Fall: CS 63A Developing Applications for iOS, 4.5 units**
**Description:** An introduction to programming the iPhone, iPad and iPod Touch devices. Covers Swift, Cocoa Touch, and the Model/View/Controller architecture. Students will learn the basics of Swift and will acquire practical experience with the tools, techniques, and concepts needed to build a basic iOS app from scratch.

**OR**

**Note: Course offered will depend on Foothill's schedule/instructor availability**

**Fall: CS 64A Writing Apps for Android, 4.5 units**
**Description:** Introduction to mobile apps programming in Java for the Android. Coding topics include the Android SDK for Eclipse, the ADT Plugin, XML fundamentals and a survey of API methods and objects used to control the Android user interface. Concept topics include layouts, activity lifecycles, runtime binding, intents, location awareness, audio, video, OpenGL ES, and monetizing apps.

## 12th Grade

**Spring: CS 22A Javascript for Programmers , 4.5 units**
**Description:** Introduction to object oriented programming in JavaScript. Topics include: client and server side programming, Model/View/Controller architecture, current tools and testing methods, interaction with HTML and CSS, Document Object Model, XML and JSON. Students will have practice writing programs for mobile web browsers and creating dynamic web pages including animation.

**For More Detailed Information:**
https://foothill.edu/schedule/outlines.html