## **COSC 348: Mobile Programming I (3 credits)**

This entry level course in Mobile Programming introduces fundamental specialized programming concepts for the iOS mobile platform. It provides students with an opportunity to apply the Design Research principles to design an app that meets business requirements with a user-centered focus. Students will have the opportunity to learn SWIFT concepts in Playground activities, develop an app using simple UIKit elements and iOS workflows. *(Prerequisite: CMPE 271, CMPE 160)*

**Course Learning Outcomes:**

By the end of the course, students will be able to:

A1. Demonstrate advanced knowledge and understanding of mobile applications development framework and process.

A2. Use specialized programming tools to design, implement, test, debug and deploy mobile applications.

B1. Develop mobile applications that solve a real-world problem using a suitable programming language.

B2. Use different approaches to design a mobile application and communicate design ideas to the target audience.

C1. Demonstrate responsibility and leadership within a team to achieve the goal of having a mobile application solution to a real-world problem.

**Course Learning Materials:**

* Develop in Swift Fundamentals: Xcode13. Apple Education.
* J.D. Gauchat. SwiftUI for Masterminds. Masterminds 2nd ed. 2022
* Ahmad Sahar and Craig Clayton. iOS 15 Programming for Beginners. Packt Publishing; 6th ed. 2021
* Matt Neuburg. iOS 15 Programming Fundamentals with Swift. O’Reilly 2021.

**Course Content:**

1. Introduction to Mobile application development and Xcode
2. Variables and constants, data types, If statements and functions
3. Optionals and Conditionals
4. Arrays and Loops
5. Structures and Enumerations
6. Object Oriented Programming
7. Protocols
8. Application Design
9. User Interface, Layout, and Previews
10. Declarative User Interface: State and Model
11. Controls, Navigation, and Lists
12. Graphics, Animation, and Gesture
13. Notifications and Storage
14. App Store Publishing