# Advanced iOS Swift Application Development

2023-20 Catalog

[ARCHIVED CATALOG]

## SDEV 266 - Advanced iOS Swift Application Development

**PREREQUISITES:** SDEV 260 - iOS Swift Application Development
PROGRAM: Software Development
**CREDIT HOURS MIN:** 3
LECTURE HOURS MIN: 2
LAB HOURS MIN: 2
DATE OF LAST REVISION: Fall, 2020

Students will leverage Swift, the iOS SDK, and Apple developer tools to design and create advanced iOS apps in this course. With iOS as the platform, students will apply object-oriented programming, design patterns, type systems, functional language features, user interface design, best practices in programming, and problem analysis

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1. Define key programming terms relevant to Swift and iOS programming.
2. Describe the process of creating iOS apps.
3. State the purpose of the Apple developer tools, including Xcode, Instruments, debugger, analyzer, and iOS Simulator.
4. Recognize patterns and idioms present in the Cocoa Touch API and other Apple frameworks.
5. Examine and subdivide app functionality into properly designed components.
6. Explain and summarize iOS API features including location, mapping, sensors, gestures, multimedia and user interface components.
7. Develop workflows and navigation hierarchies using navigation controllers, tab bar controllers, and segues.
8. Apply techniques to build an app using ARKit, basic physics simulations, image reorganization and be familiar with 3D objects.
9. Implement scroll views, table views, and building complex input screens
10. Discuss animations, concurrency, and working with the web.
11. Experiment with how to design, prototype, and architect a project of their own design.
12. Employ the Apple developer tools to create an iOS app, able to plan, prepare and build an original iOS app from concept to working program.
13. Demonstrate programming best practices in Swift.
14. Implement best practices related to secure programming in Swift.

COURSE CONTENT: Topical areas of study include -

- Mobile Application Development
- Object Oriented Programming
- User input, variables and operations
- Decision controls
- Audio, images and animation
- Application Development Lifecycle
- IDEs
- UIKit and SwiftUI
- Protocols

- Augmented Reality
- Guard
- Optional
- Navigation and Workflows
- Image Recognition
- Closures
- Extensions
- Tables and Persistence
- ARKit and SceneKit

Course Addendum - Syllabus (Click to expand)

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