



**INTRODUCTION TO SWIFT iOS APPLICATION DEVELOPMENT**  
21:198: 348 (3 credits)

**COURSE DESCRIPTION**

This course introduces the dynamic world of Apple iOS *smartphone* and *tablet* application development with Apple's Xcode IDE and the SWIFT programming language. The techniques introduced in this course may also apply to Apple Wear and Apple TV application development.

**PREREQUISITE**

21:198:102 Computer and Programming II or 21:198:220 Fundamentals of Data Visualization in R

**COURSE OBJECTIVES**

The course format is organized to provide a sequence of chapter-based Apple iOS Application projects. Each chapter focuses on specific programming topics. This learning approach provides the students with hands-on experience in creating practical real-world Apple iOS Applications. Beyond the specific focus of each project, the experience will enable each student to achieve a holistic skill set relevant to real-world applications beyond the classroom.

**TEXTBOOK**

*App Development with Swift*, by Apple Education. A free eText downloadable to Mac and iOS devices from Apple Books at <https://books.apple.com/us/book/app-development-with-swift/id1219117996>

**SUPPLEMENTAL TEXTBOOKS**

*Intro to App Development with Swift*, by Apple Education. A free eText downloadable to Mac and iOS devices from Apple Books at <https://books.apple.com/us/book/intro-to-app-development-with-swift-teacher-guide/id1118577558>

*Programming iOS 13: Dive Deep into Views, View Controllers, and Frameworks*, Matt Neuburg, O'Reilly Media; 1<sup>st</sup> Edition (January 14, 2020)  
ISBN-10: 1492074616, ISBN-13: 978-1492074618

*iOS 13 Programming Fundamentals with Swift: Swift, Xcode, and Cocoa Basics 1st Edition*, Matt Neuburg, O'Reilly Media; 1<sup>st</sup> Edition (November 12, 2019)  
ISBN-10: 1492074535, ISBN-13: 978-1492074533

Textbook can be purchased on publisher's website or from online retailers such as eBay, Amazon.

## **SOFTWARE**

**Apple Xcode IDE:** Require a Mac OS based computer and a free Apple ID or an Apple Developer ID to download, install and run. Publishing iOS apps to App Store may require Apple Developer ID.

Xcode IDE is freely available for download and install on a Mac computer, please visit <https://developer.apple.com/xcode/> or search for “Xcode” app on Apple App Store to download and install.

## **SUPPLEMENTARY READINGS**

Any and all other additional materials, or means by which to obtain these materials, will be physically or electronically provided to you by your instructor.

## **TENTATIVE COURSE TOPICS**

Chapter 1: Getting Started with App Development

Chapter 2: Introduction to UIKit

Chapter 3: Navigation and Workflows

Chapter 4: Building AR Apps with Xcode

Chapter 5: Tables and Persistence

Chapter 6: Working with the Web

Chapter 7: Prototyping and Project Planning

## **DEPARTMENT WEBSITE**

<http://www.ncas.rutgers.edu/math>

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