



School of Engineering  
*Information  
Technology Program*

## **ITP 342 iOS App Development**

**Units:** 4

**Semester:** Fall 2021

**Section:** 31890

**Days:** Mon, Wed

**Times:** 12:00–1:50 pm

**Location:** Online

**Instructor:** Trina Gregory

**Office:** OHE 412

**Office Hours:** Listed on Blackboard

**Contact Info:** [trinagre@usc.edu](mailto:trinagre@usc.edu)

**IT Help:** Provided by Viterbi IT

**Hours of Service:** 8am–5pm M–F

**Walk-in:** DRB 205

**Contact Info:** (213) 740–0517

**Email:** [engrhelphelp@usc.edu](mailto:engrhelphelp@usc.edu)

## Course Description

This course teaches how to develop applications for iOS mobile devices using the iOS SDK (Software Development Kit) and Apple's Xcode IDE (Integrated Development Environment). Students learn the fundamentals of the Swift programming language and the various frameworks needed to build native mobile apps for iPhone and iPads. Students build various apps from start to finish that follow Apple's Human Interface Guidelines, handle user input, and properly use important software design patterns.

## Learning Objectives

- Learn the syntax of the Swift programming language
- Implement an iOS mobile app by writing, testing, and debugging the code
- Evaluate and integrate third-party APIs and libraries into mobile app
- Demonstrate the design principles of effective UI design
- Learn and use the software design patterns needed for mobile app development

**Prerequisite(s):** ITP 265 or CSCI 103L (experience with object-oriented programming)

## Technological Proficiency and Hardware/Software Required

Students will need a computer (laptop or desktop) and access to the internet. If you do not have access to a computer, please see below. All software needed for the course is available for free.

## USC Technology Rental Program

We realize that attending classes online and completing coursework remotely requires access to technology that not all students possess. If you need resources to successfully participate in your classes, such as a laptop or internet hotspot, you may be eligible for the university's equipment rental program. To apply, please [submit an application](#). The Student Basic Needs team will contact all applicants in early August and distribute equipment to eligible applicants prior to the start of the fall semester.

## USC Technology Support Links

- [Zoom information for students](#)
- [Blackboard help for students](#)
- [Software available to USC Campus](#)

## Format

This course will make use of Blackboard for content and assignments. Lecture slides and any supplemental course content will be posted to Blackboard for use by all students. Any and all announcements for the course will be posted to Blackboard. All assignments will be posted to Blackboard and will be submitted through Blackboard. **Please familiarize yourself with Blackboard before the course begins.**

## Recommended Readings and Supplementary Materials



Keur, Christian. *iOS Programming: The Big Nerd Ranch Guide (6th edition)* Big Nerd Ranch Guides, 2017.  
ISBN: 978-0134682334

## Supplementary Books



Apple Education. *Intro to App Development with Swift*. Apple Inc. - Education, 2017.  
iBooks, <https://itunes.apple.com/us/book/intro-to-app-development-with-swift/id1118575552?mt=11>

## Grading Breakdown

Item	% of Grade
Assignments (weighted proportionally)	50
Exam #1	15
Exam #2	15
Final Project Proposal (in Assignments)	
Final Project (see breakdown below)	20
<b>Total</b>	<b>100</b>

## Grading Scale

Course final grades will be determined using the following scale

A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	65-66
F	64 and below

## General Policies

Students are expected to:

- Attend (or watch videos of) lectures
- Complete the individual assignments
- Complete the test
- Complete the individual final project

## Programming Assignments

Programming assignments will be posted on Blackboard under the "Assignments" section and are due at 11:59 PM PT (Pacific Time). Each assignment will include instructions, a due date, and a link for electronic submission. Assignments must be submitted using this link. Each assignment must be completed individually. Do not collaborate with other students for these assignments. If you need help, please post on Piazza. App code should be submitted on Blackboard and must compile.

## Late Policy

It is the student's responsibility to submit assignments on or before the due date. Assignments turned in one day (24 hours) late will have 10% of the total points deducted from the graded score. Assignments turned in over one day and up to three days (>24 hours and <= 72 hours) late will have 50% of the total points deducted from the graded score. After three days, submissions will not be accepted, and you will receive a 0. Each student will be allowed to submit ONE assignment with no late penalty, but this means you still must submit it within three days (72 hours) of the due date. You must indicate that you are using your free late submission in the comments when you submit the assignment, and this may not be used on the final project.

## Grading

Assignments will be graded within two weeks. Students have one week to contest a grade once it has been posted on Blackboard. To contest a grade, create a private post on Piazza with your name, the assignment

name, and your reasons. This will allow the grader and instructor to view your submission and make a decision.

### **Exams**

No make-up exams (except for documented medical or family emergencies) will be offered. If you will not be able to attend an exam due to an athletic game or other valid reason, then you must coordinate with the instructor before the exam is given. You may arrange to take the exam before you leave, with an approved university personnel during the time you are gone, or within the week the exam is given. If you do not take an exam, then you will receive a 0 for the exam.

If you need accommodations authorized by DSP (Disability Services and Programs), notify the instructor at least two weeks before the exam. This will allow time for arrangements to be made.

### **Final Project**

The final project replaces the final exam. This comprehensive assignment will be due during Finals Week and needs to be submitted by the due date. Late projects will not be accepted and will receive a 0.

### **Attendance**

Attendance is not part of the grading breakdown, although attending lectures will help you learn the material and succeed in this class. The instructor expects you to pay attention during lectures and be an active learner. Chatting while the instructor is talking, texting on your mobile device, and participating on social media sites during class is disrespectful to the instructor and your classmates. If you are not able to attend lectures, then you should watch the recorded lectures and complete the in-class labs.

### **Synchronous Session Recording Notice**

All synchronous class sessions will be recorded and provided to all students asynchronously.

### **ITP Computers**

ITP has a limited number of laptops that are available to borrow for ITP classes. This semester, ITP is working with Viterbi IT (VIT) to facilitate the shipping and/or pick-up of loaner devices for ITP students. Eligible students will be able to borrow a MacBook or Dell XPS for ITP coursework once their request is approved and their contract is signed via DocuSign. Though the initial loan period is 7 days, they will still be able to renew their device and extend the loan period as in previous semesters. They will need to pop into one of ITP's Zoom device check-in sessions before the end of each week. If all of them have been checked out, then the student will be placed on the waiting list. Information about the ITP Loaner Laptop Program and the request form can be found at <https://itp.usc.edu/current-students/itp-device-check-outs/>

You will not be able to save your work on the ITP lab computers and the ITP laptops. Once they are restarted, all work will be deleted. Use an external USB drive or a repository like GitHub or Dropbox to save your work. ITP is not responsible for any lost work.

### **Communication**

The preferred way to communicate with instructors and CTAs is posting on Piazza (<http://piazza.com>). All ITP 342 students, instructors, and CTAs will have access to the same class on Piazza. Information about accessing Piazza is available on Blackboard. If you have questions about assignments, tests, and other aspects about this course, please post on Piazza. You are able to make public posts which all members can see and answer or private posts which are only accessible to instructors and CTAs.

## **Late Add**

If a student adds the course after the first meeting, they are responsible for any lectures and work that was missed. If due dates for assignments were missed, then the student will have one week from their registration date to submit the assignments.

If the course is added during the third week of classes, then the student must meet with the instructor to create a plan together on how to catch up to the rest of the class.

## **Academic Integrity**

SCampus is USC's Student Guide to Policies and Conduct Code and can be found at <http://scampus.usc.edu>. Students will be referred to the Office of Student Judicial Affairs and Community Standards (SJACS) for further review, should there be any suspicion of academic dishonesty. The Review process can be found at <http://www.usc.edu/student-affairs/SJACS/>.

Assignments and projects in computer programming courses are different from those in some other types of courses. Students may NOT collaborate, work together, share code, or in any way exchange solutions for assignments and projects. All assignments are analyzed by software that looks for similarity. Any sharing of ideas or code will be considered a violation of academic integrity (cheating); an SJACS report will be filed with the recommended penalty of an F in the course. Do not share your code with anyone else in this or a future section of the course, as allowing someone else to copy your code carries the same penalty as you copying the code yourself.

If the instructor, a grader, or a lab assistant suspects you of academic dishonesty, it has to be reported to SJACS. Do not share assignments with another person. Do not submit another person's work as your own. Do not look at other students' papers during exams. Do not leave the room during an exam without permission. Do not cheat! As Trojans, we are faithful, scholarly, skillful, courageous, and ambitious.

## **Course Material**

Do not reproduce, distribute, or post any lecture material, assignments, or exams publicly without the written consent of the instructor. Students may take notes and make copies of course materials for their own use. They may not post the course materials on sites such as CourseHero. Doing so is a copyright violation and an academic integrity violation that will be dealt with accordingly.

### Course Schedule: A Weekly Breakdown

	Topics/Daily Activities	Assignment	Due Dates *
<b>Week 1</b>	Xcode Swift Fundamentals	Homework 0: Install Xcode	Friday, 8/27/2021
<b>Week 2</b>	Optionals & Functions Structs & Classes	Homework 1: Swift Playground	Friday, 9/4/2021
<b>Week 3</b>	Auto Layout Interface Components, Icon Images		
<b>Week 4</b>	Connections IBOutlets & IBActions	Homework 2: Profile	Tuesday, 9/14/2021
<b>Week 5</b>	Protocols & MVC Debugging & Unit Testing	Homework 3: Choose	Friday, 9/24/2021
<b>Week 6</b>	Closures Alert Controllers		
<b>Week 7</b>	Gesture Recognizers Model & Collections	Homework 4: Tip Calculator	Friday, 10/02/2021
<b>Week 8</b>	Review Exam #1		
<b>Week 9</b>	Singleton Animations		
<b>Week 10</b>	Table Views Editing Table Views	Homework 5: Flashcards	Friday, 10/16/2021
<b>Week 11</b>	Navigation Controllers Data Persistence		
<b>Week 12</b>	APIs & REST Collection Views	Homework 6: Data Persistence	Friday, 11/12/2021
<b>Week 13</b>	Review Exam #2	Project Proposal	Friday, 11/19/2021
<b>Week 14</b>	Firebase & CocoaPods Notifications		
<b>Week 15</b>	Core Location & Map Kit Localization & Internationalization		
<b>FINALS</b>		Final Project	Friday, 12/10/2021 11am – 1pm

The schedule may change during the semester to enhance learning.

\* The official due dates will be posted on Blackboard.

Final Examinations Schedule – <https://classes.usc.edu/term-20213/finals/>

## Statement on Academic Conduct and Support Systems

### Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” <https://policy.usc.edu/scampus-part-b/>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

### Support Systems

*Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call*

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. <https://engemannshc.usc.edu/counseling/>

*National Suicide Prevention Lifeline - 1-800-273-8255*

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. <http://www.suicidepreventionlifeline.org>

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call*

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. <https://engemannshc.usc.edu/rsvp/>

*Sexual Assault Resource Center*

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: <http://sarc.usc.edu/>

*Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086*

Works with faculty, staff, visitors, applicants, and students around issues of protected class. <https://equity.usc.edu/>

*Bias Assessment Response and Support*

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. <https://studentaffairs.usc.edu/bias-assessment-response-support/>

*The Office of Disability Services and Programs*

Provides certification for students with disabilities and helps arrange relevant accommodations. <http://dsp.usc.edu>

*Student Support and Advocacy – (213) 821-4710*

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. <https://studentaffairs.usc.edu/ssa/>

*Diversity at USC*

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. <https://diversity.usc.edu/>

*USC Emergency Information*

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible, <http://emergency.usc.edu>

*USC Department of Public Safety – 213-740-4321 (UPC) and 323-442-1000 (HSC) for 24-hour emergency assistance or to report a crime.*

Provides overall safety to USC community. <http://dps.usc.edu>