

# Advanced iOS App Development

ITP 344X (0 Units\*\*)   
Spring 2021

<b>Catalogue Description</b>	Learn how to develop a non-trivial and modern mobile application from start to finish for iOS devices.										
<b>Objective</b>	This course aims to introduce topics and concepts that are widely used and required in mobile applications that are released on the App Store.										
<b>Prerequisites</b>	ITP 342. May be waived if the instructor says so.										
<b>Instructor</b>	Jack Xu										
<b>Office Hours</b>	Available anytime on ITP34X Discord.										
<b>Lab Assistants</b>	Jack is looking for one! Unpaid tho...										
<b>Course Hours</b>	Mon 7:00 pm - 9:00 pm										
<b>Course Structure</b>	The class meets for two hours once a week. These sessions include lectures and hands-on learning labs. One exam is given during the semester and held during the class meetings. Assignments and a final project are completed outside of class time. For the final project for this class, you will design and create a mobile app. The idea for the app will be one of your own. Your app will have to satisfy the requirements specified by the professor. Access to a computer is recommended, although ITP holds open lab hours with computers. All course material is available on Blackboard at <a href="http://blackboard.usc.edu">http://blackboard.usc.edu</a> .										
<b>Recommend Material</b>	<i>Let's Build that App</i> , by Brian Voong, YouTube.										
<b>Grading</b>	<table> <tr> <td>Assignments (weighted proportionally).</td> <td>0%</td> </tr> <tr> <td>Midterm Exam</td> <td>0%</td> </tr> <tr> <td>Final Project Proposal</td> <td>0%</td> </tr> <tr> <td>Final Project App</td> <td>0%</td> </tr> <tr> <td><b>TOTAL POSSIBLE</b></td> <td><b>0%</b></td> </tr> </table>	Assignments (weighted proportionally).	0%	Midterm Exam	0%	Final Project Proposal	0%	Final Project App	0%	<b>TOTAL POSSIBLE</b>	<b>0%</b>
Assignments (weighted proportionally).	0%										
Midterm Exam	0%										
Final Project Proposal	0%										
Final Project App	0%										
<b>TOTAL POSSIBLE</b>	<b>0%</b>										

---

**Grading Scale** The following scale is used to determine the letter grade:

93% to infinity	S
90 - 92%	A
87 - 89%	A
83 - 86%	A
80 - 82%	A
77 - 79%	A
73 - 76%	A
70 - 72%	A
65 - 69	D
64 and below	F

If you are taking the class with a grade of P/NP, you must earn a grade of 69% or higher in order to receive a P. Final grade percentages are calculated to two decimal places and rounded to hundredths. For example, 89.99 is an A while 89.995 is rounded to 90 and still an A.

---

**Homework** The assignments will be posted on Discord under the “#344-recordings” section. Each assignment will include instructions, a due date, and a link for electronic submission. Assignments must be submitted using this link. All assignments will be digitally submitted through Blackboard except where specifically specified. Do not email them to the lecturer or lab assistant.

It is your responsibility to submit assignments on or before the due date. Assignments turned in up to three days 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. It is the responsibility of the student to contact the grader when posting late projects. Each student will be allowed ONE 24 hour late assignment for “free”. May not be used on final project, and you must indicate that you are using your free late in the comments when you submit the assignment.

You are required to keep a copy of all of your assignments. You may save your assignments using a USB flash drive or a website such as <http://www.dropbox.com>. If available, you will be given one USB flash drive from ITP. You will not be able to save your work on the ITP lab computers. ITP is not responsible for any work lost.

---

**Policies** No make-up exams (except for documented medical or family emergencies) will be offered.

A roster will be passed around the room during each lecture session. Please sign by your name for the appropriate week. Do not sign in for another student; doing so is an academic integrity violation.

ITP offers open lab use for all students enrolled in ITP classes. These open labs are held beginning the second week of classes through the last week of classes. Hours are listed at <http://itp.usc.edu/labs/>. The open labs will not have a lab assistant for this specific class. These lab times are there in case you do not have a computer or need extra time to complete an assignment.

---

---

**Academic Integrity** USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles.

SCampus is USC's Student Guide to Policies and Conduct Code and can be found at <http://scampus.usc.edu>. Section 11 contains the Behavior Violating University Standards and Appropriate Sanctions and can be found at <http://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. 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/>.

An academic integrity tutorial can be found at [http://www.usc.edu/libraries/about/reference/tutorials/academic\\_integrity/index.php](http://www.usc.edu/libraries/about/reference/tutorials/academic_integrity/index.php)

Assignments and projects in computer programming course 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 lab assignments with another student. Do not submit another student'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.**

---

<b>Incomplete and Missing Grades</b>	<p>University Grading Handbook, located at <a href="http://www.usc.edu/dept/ARR/grades/gradinghandbook/index.html">http://www.usc.edu/dept/ARR/grades/gradinghandbook/index.html</a>, contains details on incomplete and missing grades, as well as other grading concerns.</p> <p>A grade of Missing Grade (MG) should only be assigned in unique or unusual situations such as for those cases in which a student does not complete work for the course before the semester ends. All missing grades must be resolved by the instructor through the Correction of Grade Process. One calendar year is allowed to resolve a MG. If an MG is not resolved [within] one year, the grade is changed to UW (Unofficial Withdrawal) and will be calculated into the grade point average as zero grade points.</p> <p>A grade of Incomplete (IN) is assigned when work is not completed because of documented illness or other ‘emergency’ occurring <b>after the twelfth week of the semester</b> (or 12th week equivalency for any course scheduled for less than 15 weeks).</p>
<b>Support Systems</b>	<p>Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the <i>Office of Equity and Diversity</i> at <a href="http://equity.usc.edu/">http://equity.usc.edu/</a> or to the <i>Department of Public Safety</i> at <a href="http://capsnet.usc.edu/departments/public-safety/online-forms/contact-us">http://capsnet.usc.edu/departments/public-safety/online-forms/contact-us</a>. This is important for the safety of the whole USC community. Another member of the university community - such as a friend, classmate, advisor, or faculty member - can help initiate the report, or can initiate the report on behalf of another person. <i>The Center for Women and Men</i>, information at <a href="http://www.usc.edu/student-affairs/cwm/">http://www.usc.edu/student-affairs/cwm/</a>, provides 24/7 confidential support. The sexual assault resource center webpage at <a href="http://sarc.usc.edu">sarc.usc.edu</a> describes reporting options and other resources.</p>
<b>Disability Services</b>	<p><i>The Office of Disability Services and Programs</i>, information at <a href="http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html">http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html</a>, provides certification for students with disabilities and helps arrange the relevant accommodations. Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. <b>Please be sure the letter is delivered to your course instructor as early in the semester as possible.</b> If you need accommodations for an exam, the form needs to be given to the instructor at least two weeks before the exam, but preferably at the beginning the semester.</p>
<b>Emergency Preparedness</b>	<p>If an officially declared emergency makes travel to campus infeasible, <i>USC Emergency Information</i>, information at <a href="http://emergency.usc.edu/">http://emergency.usc.edu/</a>, will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology. Additional information about <i>Campus Safety and Emergency Preparedness</i> can be found at <a href="http://preparedness.usc.edu">http://preparedness.usc.edu</a>.</p>

Course Outline*		
Week	Topics	Activities/Assignments
1	Course cancelled, unfortunately	Slides / Homework #1
2	<p><b>Intro:</b> <i>Intro, Xcode Setup, CocoaPods</i></p> <p><b>Swift Review:</b> <i>Constants and Variables, Collection Types, Optionals, Print, Control Flow, Structures, Classes, Functions, Protocols, Extensions, Enumerations, Closures, Error Handling, Automatic Reference Counting</i></p> <p><b>UIKit Fundamentals:</b> <i>Programmatic UI, SnapKit</i></p>	Slides / Homework #1?
3	<p><del><b>Threading:</b> <i>Grand Central Dispatch (GCD)</i></del></p> <p><del><b>Networking:</b> <i>Internet Services and REST APIs, Serialization and JSON</i></del></p>	Slides / Homework #3
4	<p><del><b>SW Engineering:</b> <i>Design Patterns</i></del></p> <p><del><b>Foundation:</b> <i>User Defaults for Simple Persistence</i></del></p>	Slides / Homework #4
5	<p><del><b>User Notifications:</b> <i>Push Notifications, Local Notifications</i></del></p> <p><del><b>UIKit:</b> <i>Camera and Photo Library</i></del></p>	Slides / Homework #5
6	<p><del><b>AVFoundation:</b> <i>Audio and Video Playback</i></del></p> <p><del><b>Swift UI:</b> <i>Introduction</i></del></p>	Slides / Homework #6
7	<p><del><b>Xcode:</b> <i>Debugging and Instrumentation</i></del></p> <p><del><b>Xcode:</b> <i>Dependency Management Using CocoaPods</i></del></p>	Slides / Homework #7
8	<p><del><b>CoreLocation:</b> <i>Geofencing</i></del></p> <p><del><b>Cloud Services:</b> <i>Firebase</i></del></p>	Slides / Homework #8

- \* This course outline is for planning purposes and is subject to change.
- \*\* This course counts for zero units because of course it does.