Objectives and Outcomes

This is a two-unit practicum course, meaning you will receive training and gain experience building systems according to modern best practices. All computer science majors must complete this or Web Application Development (CMSI 2021) in order to experience full-stack development before undertaking the rigorous courses in the junior and senior years. Long after the course concludes, my hope is that you will be able to:

1. Complete mobile application projects as full-stack developers
2. Demonstrate useful skills in front-end, back-end, API, and database development
3. Participate in an agile development process
4. Demonstrate competency in a mobile application stack, using modern frameworks such as SwiftUI
5. Show knowledge of established technology company processes related to business and software development concerns, such as ideation, pitching, and presenting

In addition to the course-specific content, you are also expected to:

6. Follow disciplinary best practices throughout the course

Materials and Texts

Most of the course content will be found online—and no different from what actual mobile app developers use for their own learning. It’s a practicum course after all! Links to these resources are on the course website. In addition, do not hesitate to look for further information regarding the concepts, techniques, tools, and paradigms in the course.

As a practicum, we focus on specific technologies to keep things cohesive and concrete. For this offering, these are the iOS platform using the Swift programming language, with SwiftUI on the front end and Firebase on the back. As such, you’ll need:

- Access to an iOS mobile device that can be used for deploying and testing applications
- Access to a macOS device for writing and debugging code
- The Swift Playgrounds application for learning and practice, and the Xcode application for application development
- An Apple ID for these applications and devices
- A Google ID for use with Firebase

Course Work and Grading

Your final grade will be based on the percentage of the points you get for the following deliverables against the total number of possible points:

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standalone mobile app</td>
<td>50</td>
</tr>
<tr>
<td>Generic API-backed mobile app</td>
<td>100</td>
</tr>
<tr>
<td>Firebase-backed mobile app</td>
<td>100</td>
</tr>
<tr>
<td>Your own mobile app</td>
<td>250</td>
</tr>
</tbody>
</table>

Total 500 points

Percentages ≥ 90% get an A– or better; ≥ 80% get a B– or better; ≥ 70% get a C– or better. I may nudge grades upward based on qualitative considerations such as degree of difficulty, effort, class participation, time constraints, and overall attitude toward the course.
Disciplinary Best Practices (Objective 6)

Appearance of these in the syllabus constitutes fair warning of the consequences of not heeding them.

Punctuality

An assignment’s number is its due date in mm/dd format, and it is always due by 11:59:59.999pm of that date. Point values are based on the state of your assignments at that moment. If there is an issue that prevents you from submitting an assignment on time (e.g., personal or family issues, sickness, conference attendance, can’t-miss raid battles, job interviews, a family trip, or emergencies), let the instructor know ahead of time.

Clean Code

The quality of your code, not just its correctness, will play a part in determining your grade. Please refer to the course website’s resources and notes on clean code for information on expectations of code quality.

Version Control

Version control is an indispensable part of today’s computer science landscape in industry, the academe, and the open source community. We use version control heavily in this course: make sure that you get the hang of it.

None of the assignments can be completed (well) overnight; they should be the result of steady progress from the moment they are assigned to the date they are due. “One and done” submissions will negatively affect the final score.

Workload Expectations

In line with the LMU Credit Hour Policy, the workload expectation for this two-credit-hour course is a minimum of 2 × 3 = 6 hours of work by an average student per week, including the time that we spend together in the classroom.

Attendance

Attendance at all sessions is expected, but not absolutely required. If you must miss class (for reasons such as those listed in the Punctuality section, or anything else), it is your responsibility to notify me about this and keep up with the course.

The last day to add or drop a class without a grade of W is January 13. The withdrawal or credit/no-credit deadline is March 17.

Academic Honesty

Loyola Marymount University is a community dedicated to academic excellence, student-centered education, and the Jesuit and Marymount traditions. As such, the University expects all members of its community to act with honesty and integrity at all times, especially in their academic work. Academic honesty requires that all members of the LMU community act with integrity, respect their own intellectual and creative work as well as that of others, acknowledge sources consistently and completely, act honestly during exams and on assignments, and report results accurately. As an LMU Lion, by the Lion’s Code, you are pledged to join the discourse of the academy with honesty of voice and integrity of scholarship.

Academic dishonesty will be treated as an extremely serious matter, with serious consequences that can range from receiving no credit for assignments/tests to expulsion. It is never permissible to turn in any work that has been copied from another student or copied from any source (including the Internet) without properly acknowledging/citing the source. It is never permissible to work on an assignment, exam, quiz, or any project with another person unless your instructor has indicated so in the written instructions/guidelines. It is your responsibility to make sure that your work meets the standard of academic honesty set forth in the “Academic Honesty Policy” found at:

https://academics.lmu.edu/honesty

Course Evaluations

Student feedback provides valuable information for continued improvement. All students are expected to fairly and thoughtfully complete a course evaluation for this course. This semester, course evaluations will be administered online through the Blue™ evaluation system. You will receive an email notification at your Lion email address when the evaluation form is available. You may also access the evaluation form on Brightspace (https://brightspace.lmu.edu) dashboard during the evaluation period. Your responses will be anonymous and will not be linked to you in any way.
Special Accommodations
The Disability Support Services (DSS) Office offers resources to enable students with ADD/ADHD; physical, learning, and psychiatric disabilities; and those on the autism spectrum to achieve maximum independence while pursuing their educational goals. Staff specialists interact with all areas of the University to eliminate physical and attitudinal barriers. Students must provide documentation for their disability from an appropriate licensed professional. Services are offered to students who have established disabilities under state and federal laws. DSS personnel also advise students, faculty, and staff regarding disability issues. Students who need reasonable modifications, special assistance, academic accommodations or housing accommodations should direct their request to the DSS Office as soon as possible. All discussions will remain confidential. The DSS Office is located on the 2nd floor of Daum Hall and may be reached by email at dsslmu@lmu.edu or phone at (310) 338-4216. Please visit http://www.lmu.edu/dss for additional information.

Topics and Important Dates
Correlated outcomes are shown for each topic. Specifics may change as the course progresses. University dates (italicized) are less likely to change.

<table>
<thead>
<tr>
<th>January</th>
<th>Learning Swift via Swift Playgrounds; introduction to Xcode and SwiftUI</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 13</td>
<td>Last day to add or drop a class without a grade of W</td>
</tr>
<tr>
<td>February</td>
<td>More Swift and SwiftUI; the iOS Human Interface Guidelines</td>
</tr>
<tr>
<td>February 27–March 3</td>
<td>Spring break; no class</td>
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<tr>
<td>March</td>
<td>Introduction to network, authentication, and database APIs; introduction to Firebase and Firestore</td>
</tr>
<tr>
<td>March 17</td>
<td>Last day to withdraw from classes or apply for Credit/No Credit grading</td>
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<tr>
<td>March 31</td>
<td>Cesar Chavez Day; no class</td>
</tr>
<tr>
<td>April</td>
<td>Ideation and design; “your own mobile app” pitch presentations and work sessions</td>
</tr>
<tr>
<td>April 5–7</td>
<td>Easter break; no class</td>
</tr>
<tr>
<td>May 2, 3</td>
<td>Final mobile app presentations (based on LMU final exam schedule)</td>
</tr>
<tr>
<td>May 3</td>
<td>Final mobile app assignment due</td>
</tr>
</tbody>
</table>

You can view my class calendar and office hour schedule in any iCalendar-savvy client. Its subscription link can be found on the course web site (it’s too long to provide in writing).

Tentative Nature of the Syllabus
If necessary, this syllabus and its contents are subject to revision. Students are responsible for any changes or modifications announced or distributed in class, emailed to students’ LMU Lion accounts, or posted on LMU’s course management system, Brightspace. If you are absent from a synchronous class session, it is the student’s responsibility to check Brightspace and with the professor to see if you missed any important class announcements. Students should not rely on word-of-mouth from classmates.