



## ACAD277: Dev III: Designing Applications for Emerging Platforms

Units: 4.0

Spring 2022–TTh–2:00-3:50 PT

Location: IYH 211 when not online

**Instructor:** Mike Crowley, Yihyun Lim

**Office:** Online

**Office Hours:** By appointment

**Contact Info:** [crowley@usc.edu](mailto:crowley@usc.edu), [yihyun@usc.edu](mailto:yihyun@usc.edu)

**IT Help:** <https://iovine-young.usc.edu/ait/index.html>

**Hours of Service:** 8:30am - 6:30pm

**Contact Info:** [iya.helpdesk@usc.edu](mailto:iya.helpdesk@usc.edu), 213-821-6917

### Course Description

In this two-part course (UX design lab and coding lab), students will be introduced to principles of UI/UX design and SWIFT programming. Through this course, students will be able to design a user-centered mobile application and develop a functional MVP of an iOS app. The hands-on lab sessions will introduce students to UX design methods, low-fidelity prototyping and user testing, UI design, and SWIFT programming language.

### Learning Objectives and Outcomes

By the end of the course, students will have gained experience in SWIFT programming language, and understand the definition and principles of UI/UX design in order to design with intention. Through weekly lab exercises and assignments, students will design a user-focused mobile app experience, and develop a working prototype. Students will work individually and in teams to engage in a unique project designed to address specific user concerns by developing and applying skill sets and knowledge from the course.

**Prerequisite(s):** Open only to Arts, Technology and the Business of Innovation students and ACAD 276.

**Co-Requisite(s):** N/A

**Concurrent Enrollment:** N/A

**Recommended Preparation:** N/A

**Required Textbook:** SwiftUI by Tutorials, 3rd edition, ISBN: 9781950325382; Swift Apprentice, 6th edition, ISBN: 9781950325306

### Description and Assessment of Assignments

The following is a breakdown of the assignment expectations. Unless otherwise noted, all submissions will be due prior to the class session via email.

Students are expected to produce professional level content that demonstrates a mastery of raw technique as well as an attention to aesthetic quality. In the case of interactive media, a professional level result is aesthetically

pleasing while functionally sound. To assess technique, the source material will be evaluated to ensure that methodologies taught in class are utilized for the result for each assignment.

Attendance and participation requirements:

- Live sessions: Your attendance is required for each course meeting time.
- Participating in presentations and critiques: As part of your participation, you can expect to both present your own work and critique the work of your peers for each assignment. Students are expected to participate in class critiques of projects, as well as discussion pertaining to example work.

Office hours: Office hours are optional and will be held by appointment via Zoom.

### Grading

Assignment	Points	% of Grade
SWIFT Lab assignments	300	30%
UX Design assignments (8 total)	400 (50 pts each)	40%
Final Project	200	20%
Attendance	100	10%
Total	1,000	100%

### Grading Scale

Course final grades will be determined using the following scale

A	94-100
A-	90-93
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

### Assignment Submission Policy

Unless otherwise noted, all assignments must be submitted as a PDF presentation. For assignments delivered in class (such as presentations), the work must be completed before the commencement of the class session in which the assignment is due. For assignments that are designated for virtual submission (“COB”), one team member is expected to submit the assignment to [crowley@usc.edu](mailto:crowley@usc.edu), [yihyun@usc.edu](mailto:yihyun@usc.edu) (unless otherwise specified) by 6PM of the day the assignment is indicated as due.

## **Grading Timeline**

Grades and feedback for all assignments will be returned to students within one week of submission. Grades will be provided over email. Students are encouraged and expected to keep track of their status in the class through documenting these grades. If at any point, a student is uncertain about their status in the class, students may email [crowley@usc.edu](mailto:crowley@usc.edu), [yihyun@usc.edu](mailto:yihyun@usc.edu)

## **Additional Policies**

Assignments will be accepted after the deadline with the following grade penalties. Do not ask for extensions; the below are the extensions.

- Submission in the 24 hours after the deadline 10% deduction
- Submission between 24 and 48 hours after the deadline 20% deduction
- Submission between 48 hours and 3 days after the deadline 50% deduction
- Submission more than 3 days after the deadline 100% deduction

## **Academy Attendance Policy**

The Academy maintains rigorous academic standards for its students and on-time attendance at all class meetings is expected. Each student will be allowed two excused absences over the course of the semester for which no explanation is required. Students are admonished to not waste excused absences on non-critical issues, and to use them carefully for illness or other issues that may arise unexpectedly. Except in the case of prolonged illness or other serious issue (see below), no additional absences will be excused. Each unexcused absence will result in the lowering of the final grade by  $\frac{1}{3}$  of a grade (e.g., an A will be lowered to A-, and A- will be lowered to B+, etc.). In addition, being tardy to class will count as one-third of an absence. Three tardies will equal a full course absence.

Students remain responsible for any missed work from excused or unexcused absences. Immediately following an absence, students should contact the instructor to obtain missed assignments or lecture notes and to confirm new deadlines or due dates. Extensions or other accommodations are at the discretion of the instructor.

Automatically excused absences normally may not be used for quiz, exam or presentation days. Using an excused absence for a quiz, exam or presentation, such as in the case of sudden illness or other emergency, is at the discretion of the instructor.

In the case of prolonged illness, family emergencies, or other unforeseen serious issues, the student should contact the instructor to arrange for accommodation. Accommodation may also be made for essential professional or career-related events or opportunities. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

## ***Spring 2022 addendum:***

- Unless students provide an accommodation letter from USC's Office of Student Accessibility Services or a letter from IYA Student Services detailing visa or travel restrictions, attendance and active participation is expected in the classroom. Any student with such accommodations should submit their accommodation document to the instructor as soon as possible to discuss appropriate accommodations. Either classroom recordings or live remote access to the class via Zoom will be provided.
- Students who are experiencing illness should not attend class in person. Please inform the instructor in advance of any class sessions that you can't attend for medical reasons, and accommodations will be arranged

to view recorded lectures and submit alternatives to any missed class participation. Students will not be penalized for not attending class in person under these circumstances.

· In the event that you find yourself experiencing COVID-19 related symptoms, in keeping with university recommendations, you should Stay home! This is the best way to prevent spreading COVID-19 as supported by scientific evidence; Please do not come to an in-person class if you are feeling ill, particularly if you are experiencing symptoms of COVID-19.

### Course Schedule: A Weekly Breakdown

\*Please cross-reference with the Assignments section of the syllabus for greater details on deliverables.

Blue text = Assignment due

Green highlight = Zoom day

Week	Session 01 (Tuesday)	Session 02 (Thursday)
1	<p><b>Jan 11</b></p> <p><b>Introduction to course: UX design and SWIFT lab sections</b></p> <p><b>Recommended Reading:</b> The Design of Everyday Things: Revised and Expanded Edition, Don Norman, ISBN-10: 0465050654</p>	<p><b>Jan 13</b></p> <p><b>Lecture: Swift Basics</b></p> <p>Swift Apprentice chapters 1 - 4</p>
2	<p><b>Jan 18</b></p> <p><b>Lecture: What is User Experience Design? An Overview</b></p> <p>Success of digital experience hinges on one thing: how users perceive it. Does it deliver value? Is it easy to use? Is it pleasant to use?</p> <p><b>UX Assignment 1:</b> Mobile UI/UX Case studies (Due Jan 25th)</p>	<p><b>Jan 20</b></p> <p><b>Lecture: Functions, Arrays, and Dictionaries</b></p> <p>Swift Apprentice chapters 5 and 7</p> <p><b>Lab 1:</b> (Due Jan 23rd)</p>
3	<p>Jan 25</p> <p><b>Lecture: Design Principles and UX Design Methods</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Review of assignment.</li> <li>- Selection of thematic area for class project</li> </ul> <p><b>UX Assignment 2:</b></p> <ul style="list-style-type: none"> <li>- Competitive Research (Due Feb 1)</li> </ul> <p><b>Resources:</b></p>	<p>Jan 27</p> <p><b>Lecture: Strings and Structures</b></p> <p>Swift Apprentice chapters 9 and 10</p> <p><b>Lab 2:</b> (Due Jan 30th)</p>

	<p><u>UX Research Methods Bank</u>: A list of UX research methods and techniques, with explanation and some links.  <a href="https://uxmastery.com/resources/techniques">https://uxmastery.com/resources/techniques</a></p> <p><u>UX Glossary</u>: An interactive glossary of UX and related terms  <a href="https://uxmastery.com/resources/glossary/">https://uxmastery.com/resources/glossary/</a></p>	
4	<p>Feb 1  <b>Lecture: UX Design - Designing for users</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Designing user research protocols</li> <li>- Understand how to engage the user to work through assumptions and preconceived notions that arise during the process. Write down assumptions for your class project.</li> </ul> <p><b>UX Assignment 3:</b> User studies - structure and conduct user interviews to better identify the needs and current behaviors of the user. Interview 3-5 people. (Due Feb 8)</p>	<p>Feb 3  <b>Lecture: Properties, Methods and Classes</b></p> <p>Swift Apprentice chapters 11 - 13</p> <p><b>Lab 3:</b> (Due Feb 6th)</p>
5	<p>Feb 8  <b>Lecture: UX Design - Synthesizing User Research and Creating Personas</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Review of user studies findings</li> <li>- Create user personas from the interviews to represent the goals and behaviors of the users within the system.</li> <li>- Develop user scenarios to show when and how the user engages with the system.</li> </ul> <p><b>Assignment 4:</b> User study synthesis document - Persona and User Journey (Due Feb 15)</p>	<p>Feb 10  <b>Lecture: Advanced Classes</b></p> <p>Swift Apprentice chapter 14</p> <p><b>Lab 4:</b> (Due Feb 13th)</p>
6	<p>Feb 15  <b>Lecture: UX Design - Concept Ideation</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Ideation and brainstorming, UX flow map</li> </ul> <p><b>UX Assignment 5:</b> Three concepts for mobile application (Due Feb 22)</p>	<p>Feb 17  <b>Lecture: Diving into SwiftUI</b></p> <p>SwiftUI by Tutorial chapters 1 - and part of chapter 2</p> <p><b>Lab 5:</b> (Due Feb 27th)</p>

7	<p>Feb 22  <b>Lecture: UX Design - Prototyping Ideas</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Review of concepts, UX flow map</li> <li>- UI low-fidelity prototypes</li> </ul> <p><b>UX Assignment 6:</b> UI wireframe sketches and mockups (Due Mar 1)</p>	<p>Feb 24  <b>Lecture: Diving into SwiftUI continued</b></p> <p>SwiftUI by Tutorials finish chapter 2</p>
8	<p>Mar 1  <b>Lecture: Graphic Identity Design</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Creating UI graphic assets, graphic and logo identity</li> </ul> <p><b>UX Assignment 7:</b> Graphic identity, color schemes, logo design (Due Mar 8)</p>	<p>Mar 3  <b>Lecture: Diving Deeper into SwiftUI</b></p> <p>SwiftUI by Tutorials chapter 3</p> <p><b>Lab 6:</b> (Due Mar 6th)</p>
9	<p>Mar 8  <b>Lecture: Usability and User Experience Testing</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Creating user testing protocols, identifying metrics, in-class testing with peers</li> </ul> <p><b>UX Assignment 8:</b> Conduct usability testing with 5+ users produce insights report (Due Mar 22)</p>	<p>Mar 10  <b>Lecture: Introduction to Controls: Text, Image and Introduction to User Input</b></p> <p>SwiftUI by Tutorials chapter 5 and part of chapter 6</p> <p><b>Lab 7:</b> (Due Mar 20th - because of Spring Break)</p>
<b>SPRING BREAK</b>		
10	<p>Mar 22  <b>Testing results and iterative design</b></p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Review user testing results, iterate design</li> <li>- Final project kick-off</li> <li>- Identifying MVP</li> </ul> <p><b>FP Assignment 1:</b> MVP outline, wireframes</p>	<p>Mar 24  <b>Lecture: More ways to get User Input; More on Layouts</b></p> <p>SwiftUI by Tutorials finish chapter 6 and some of chapter 7</p>
11	<p>Mar 29  <b>Lecture/Activity: Intentional and Intuitive Design</b>  Great app experiences are dynamic, personal, and most importantly intuitive and communicate clear intent. We'll evaluate existing products with a focus on consistency and intention.</p>	<p>Mar 31  <b>Lecture: State and Data Flow Part 1</b></p> <p>SwiftUI by Tutorials chapter 8</p>

	<p><b>FP Assignment 2:</b></p> <ul style="list-style-type: none"> <li>- Creating mid-high fidelity prototypes in Figma</li> <li>- Evaluation, and iteration of design with focus on intentionality and intuitiveness</li> </ul>	
12	<p>Apr 5</p> <p><b>Lecture: Guest Lecture (TBD)</b></p> <p><b>Assignment:</b> continue to work on final project</p>	<p>Apr 7</p> <p><b>Lecture: State and Data Flow Part 2</b></p> <p>SwiftUI by Tutorials chapter 9</p>
13	<p>Apr 12</p> <p><b>Lecture/Activity: Inclusive Design</b></p> <p><b>FP Assignment 3:</b></p> <ul style="list-style-type: none"> <li>- Continue to work on final project</li> <li>- Evaluation, and iteration of design with focus on inclusivity</li> </ul>	<p>Apr 14</p> <p><b>Lecture: Navigation</b></p> <p>SwiftUI by Tutorials chapter 13</p>
14	<p>Apr 19</p> <p><b>Lecture/Activity: Legibility and Visibility in Design</b></p> <p><b>FP Assignment 4:</b></p> <ul style="list-style-type: none"> <li>- Continue to work on final project</li> <li>- Evaluation, and iteration of design with focus on legibility and visibility</li> </ul>	<p>Apr 21</p> <p><b>Lecture: More User Input and App Storage</b></p> <p>SwiftUI by Tutorials chapter 10</p>
15	<p>Apr 26</p> <p><b>Lecture/Activity: Discoverable and Memorable Design</b></p> <p><b>FP Assignment 5:</b></p> <ul style="list-style-type: none"> <li>- Continue to work on final project</li> <li>- Evaluation, and iteration of design with focus on discoverability and memorability</li> </ul>	<p>Apr 28</p> <p><b>Lecture: Gestures and Lists</b></p> <p>SwiftUI by Tutorials chapters 11 and 14</p>
<b>Study Days</b>		
<p><b>Final Exam Slot (Thursday May 5th, 2:00 - 4:00 pm): None</b></p> <p>Final Presentation: Presentation of concept, process, features, intentions, UX storytelling, and demo of MVP app (more details to follow).</p> <p style="color: red;">Submit code + PDF of presentation by midnight, May 4th</p>		

**HOW TO PURCHASE SOFTWARE AT THE DISCOUNTED ACADEMY RATE THROUGH THE USC BOOKSTORE:**

The following first year software are now available for purchase online through the USC Bookstore at the Academy discounted rate:

<b><u>Software</u></b>	<b><u>IYA Short-Term License at USC Bookstore</u></b>
<b>Adobe Creative Cloud</b>	<b>\$70 2021-2022 annual license</b>

1. Visit the USC Bookstore online:

<https://www.uscbookstore.com/uscivasoftware>

1. Select the software license(s) you would like to purchase.

2. When you proceed to checkout, add the Promo Code “IYASoftware” (This will override the listed taxes).

3. For shipping, select FedEx Home Delivery (free).

4. Once you complete your online purchase, you will receive a confirmation email/receipt. *(Note that even if a shipping charge appears on your invoice, it will not be charged to your credit card. This relates to a known technical problem with the Bookstore’s online store.)*

5. Upload your receipt [here](#) to receive access to your purchased license.

6. You will be notified by email when the license has been activated

## 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” [policy.usc.edu/scampus-part-b](http://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, [policy.usc.edu/scientific-misconduct](http://policy.usc.edu/scientific-misconduct).

### Support Systems:

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

[engemannshc.usc.edu/counseling](http://engemannshc.usc.edu/counseling)

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

*National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call*

[suicidepreventionlifeline.org](http://suicidepreventionlifeline.org)

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

*Relationship and Sexual Violence Prevention Services (RSVP)*

-213-740-9355 (WELL)

<https://studenthealth.usc.edu/sexual-assault/>

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Relationship and Sexual Violence Prevention and Services provides immediate therapy services for situations related to gender- and power-based harm (e.g., sexual assault, domestic violence, stalking). (wording from the site)

*Office of Equity and Diversity (OED) | Title IX - (213) 740-5086*

[equity.usc.edu](http://equity.usc.edu), [titleix.usc.edu](http://titleix.usc.edu)

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

*USC Policy Reporting to Title IX (213) 740-5086*

<https://policy.usc.edu/reporting-to-title-ix-student-misconduct/>

The university encourages individuals to report prohibited conduct to the *Title IX Office*. Individuals can report to the university *Title IX Coordinator* in the *Office of Equity and Diversity*.

*Bias Assessment Response and Support - (213) 740-2421*

[studentaffairs.usc.edu/bias-assessment-response-support](http://studentaffairs.usc.edu/bias-assessment-response-support)

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

*The Office of Disability Services and Programs - (213) 740-0776*

[dsp.usc.edu](http://dsp.usc.edu)

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

*USC Support and Advocacy - (213) 821-4710*

[studentaffairs.usc.edu/ssa](http://studentaffairs.usc.edu/ssa)

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

*Diversity at USC - (213) 740-2101*

[diversity.usc.edu](http://diversity.usc.edu)

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

*USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*

[dps.usc.edu](http://dps.usc.edu), [emergency.usc.edu](http://emergency.usc.edu)

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

*USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call*

[dps.usc.edu](http://dps.usc.edu)

Non-emergency assistance or information.