Objective
This is the capstone course for the Mobile App Development minor. The students will be divided into project teams, and each team will develop a marketable mobile app. Ideally, each project team will have 3 or 4 students with a maximum of 5. The goals are to expose students to the process of developing a new mobile app from start to finish and to provide an experience very similar to what a developer would have at any company where they work to produce an app that not only works but is also something that meets the needs of their clients. We will work with organizations inside USC and outside USC, who will act as their clients.

This course gives the students an opportunity to bring together skills and knowledge they have learned in several other courses in order to build a moderately complex mobile app. Each project team will be required to:

• Meet with their client several times during the semester
• Create an app design document (includes app definition statement and wireframes)
• Usability test their wireframes and create a report
• Develop their app
• Demonstrate their app to the client, the instructor, and the other students
• Participate in a team oral presentation of their app

This course will strongly emphasize the importance of teamwork and communications between the students and their client as a necessary aspect of the project.

Concepts
Mobile app development, project management, and quality assurance.

Prerequisites
ITP 140 and 2 other classes from minor

Instructor
Trina Gregory

Contacting the Instructor
trina.gregory@usc.edu

Office Hours
Listed on Blackboard under Contacts

Lab Assistants
Listed on Blackboard under Contacts

Lecture/Lab
2 hours, twice a week, for a total of 4 hours
Required Textbooks

*Manage It! Your Guide to Modern, Pragmatic Project Management* by Johanna Rothman, Pragmatic Bookshelf, 978-0978739249

Optional Textbooks

None

Website

All course material will be on Blackboard ([http://blackboard.usc.edu](http://blackboard.usc.edu)).

Project

The students will be divided into project teams, and each team will develop a marketable mobile app. Ideally, each project team will have 3 or 4 students with a maximum of 5. Clients will be arranged by the instructor and could be groups inside and outside of USC. Teams will be determined in the first two weeks of class. Teams will be matched with the clients based on interest of the students in the teams. If there are not enough clients for the number of teams, then those teams may use their own ideas for apps. In this case, the instructor will act as their client. The app proposal will be due at the end of Week 3. The wireframes will be due the end of Week 6. The app will be due at the end of Week 15. Throughout the semester, each team needs to meet with their client several times (as determined by the client) and the instructor on a biweekly basis. During the final exam timeslot, each team will present their app to the rest of the class, the clients, industry professionals, and the instructor. A sample project is the Urban Lights mobile app developed for LACMA (Los Angeles County Museum of Art) in which students met with LACMA employees, received data, designed, and then implemented a mobile app showcasing the Urban Lights display.

Grading

The following percentage breakdown will be used in determining the grade for the course.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>App proposal</td>
<td>10%</td>
<td>Due end of Week 3</td>
</tr>
<tr>
<td>App wireframes</td>
<td>15%</td>
<td>Due end of Week 6</td>
</tr>
<tr>
<td>Biweekly office meetings</td>
<td>15%</td>
<td>Meet with course instructor</td>
</tr>
<tr>
<td>Project</td>
<td>30% (a)</td>
<td>Due end of Week 15</td>
</tr>
<tr>
<td>Final project presentation</td>
<td>15% (b)</td>
<td>According to final exam schedule</td>
</tr>
<tr>
<td>Instructor’s assessment</td>
<td>15% (c)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

(a) This assumes that all team members contribute about equally to the project. A team member who does not contribute as much to the project as the others will have their grade reduced accordingly.

(b) Besides the technical aspects, your final presentation will be graded for its writing style, grammar, effectiveness and form. Examples are available from the instructor.

(c) The instructor’s assessment will include teamwork, communication skills, work habits, office and lecture attendance, methods used in accomplishing the project, and project scheduling.
Grading Scale
The following shows the grading scale to be used to determine the letter grade.

- 93% and above: A
- 90% - 92%: A-
- 87% - 89%: B+
- 83% - 86%: B
- 80% - 82%: B-
- 77% - 79%: C+
- 73% - 76%: C
- 70% - 72%: C-
- 67% - 69%: D+
- 64% - 66%: D
- 63% and below: F

Policies
The labs will be posted on Blackboard under the “Assignments” section. Each lab will include instructions, a due date, and a link for electronic submission. Labs must be submitted using this link. Do not email them to the lecturer or lab assistant. Always keep a backup copy of them.

It is your responsibility to submit your assignments on or before the due date. Assignments turned in one day late will have 10% of the total points deducted from the graded score. Assignments turned in two days late will have 20% of the total points deducted from the graded score. Assignments turned in 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.

ITP will have open lab hours starting the second week of the semester. They give you an opportunity to work on assignments or projects. An ITP 442 lab assistant may not be present.

Each time the class meets, a roster will be passed around the room. Please initial by your name for the appropriate week.

Incomplete and Missing Grades
The University Grading Handbook covers all grading concerns and can be found at: http://www.usc.edu/dept/ARR/grades/gradinghandbook/index.html.

A grade of Missing Grade (MG) “should only be assigned in unique or unusual situations... 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 [Unofficial Withdrawal] UW and will be calculated into the grade point average a zero grade points.”
A grade of Incomplete (IN) “is assigned when work is not completed because of documented illness or other ‘emergency’ occurring after the twelfth week of the semester (or 12th week equivalency for any course scheduled for less than 15 weeks).”

**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](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/](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/](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).

Examples of behavior violating University standards:

- The submission of material authored by another person but represented as the student’s own work, whether that material is paraphrased or copied in verbatim or near-verbatim form.
- Acquisition of term papers or other assignments from any source and the subsequent presentation of those materials as the student’s own work, or providing term papers or assignments that another student submits as his/her own work.
- Obtaining for oneself or providing for another person a solution to homework, a project or other assignments, or a copy of an exam or exam key without the knowledge and expressed consent of the instructor.
- Unauthorized collaboration on a project, homework or other assignment. Collaboration between students will be considered unauthorized unless expressly part of the assignment in question or expressly permitted by the instructor.
- Fabrication: Submitting material for lab assignments, class projects or other assignments which is wholly or partially falsified, invented or otherwise does not represent work accomplished or undertaken by the student.
- Forgery, unauthorized alteration or unauthorized use of any university document, records, keys or instruments of identification, or of documents or records related to functions of the university.

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. Do not cheat! As Trojans, we are faithful, scholarly, skillful, courageous, and ambitious.

**Students with Disabilities**

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. Please be sure the letter is delivered to your course instructor (or TA) as early in the semester as possible. If you need accommodations for an exam, the form needs to be given to the instructor at least two weeks before the exam.

DSP is located in STU 301 and is open from 8:30am to 5:00pm, Monday through Friday. Contact info: 213-740-0776 (Phone), 213-740-6948 (TDD only), 213-740-8216 (FAX), ability@usc.edu, http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html.

**Emergency Preparedness/Course Continuity in a Crisis**

In case of emergency, when travel to campus is difficult, if not impossible, USC executive leadership will announce a digital way for instructors to teach students in their residence halls or homes using a combination of the Blackboard LMS (Learning Management System), teleconferencing, and other technologies. Instructors should be prepared to assign students a “Plan B” project that can be completed ‘at a distance.’ Additional information about Campus Safety and Emergency Preparedness can be found at: http://preparedness.usc.edu.
Mobile App Project
ITP 442x (4 Units)

Course Outline

Week 1 – Overview of Course and Starting a Project
- Course requirements
- Project requirements
- Starting a project

**Reading**
Rothman: Chapter 1

**Assignment/Lab**
Students bring resumes and introduce themselves
Meet clients and create groups

Week 2 – Planning the Project
- Develop a project plan template
- Create roles for team members
- Brainstorm ideas

**Reading**
Rothman: Chapter 2

**Assignment/Lab**
Develop a project plan template and brainstorm app ideas

Week 3 – Design Your Project
- Project Life Cycles
- User interface guidelines

**Reading**
Rothman: Chapter 3

**Assignment/Lab**
Create your app proposal which includes the app definition statement, list of key features, and target audience

Week 4 – Scheduling the Project and Estimating the Work
- Project scheduling
- Scheduling techniques

**Reading**
Rothman: Chapters 4 and 5

**Assignment/Lab**
Create your project schedule
Week 5 – Avoiding Schedule Games and App Prototyping
- Recognize and avoid schedule games
- Paper prototyping and wireframing

Reading
Rothman: Chapter 6

Assignment/Lab
Create wireframes for your app

Week 6 – Team Dynamics and App Design
- Recruit the right people
- Help the team jell
- Know when to add more people

Reading
Rothman: Chapter 7

Assignment/Lab
Create app design document

Week 7 – Usability Testing
- Page layout
- Color schemes
- Findability
- Localization

Reading
Website: http://www.mobileapptesting.com/mobile-app-usability-testing/2011/04/

Assignment/Lab
Conduct usability tests of your app and create a report

Week 8 – Developing the Project
- Conduct interim retrospectives
- Rank the requirements
- Team member assignments

Reading
Rothman: Chapter 8

Assignment/Lab
Develop app

Week 9 – Maintaining Project Rhythm
- Implement by feature, not by architecture
- Separate GUI design from requirements

Reading
Rothman: Chapter 9

Assignment/Lab
Continue app development
Each team meets separately with the instructor
Week 10 – Alpha Release
- Major features implemented
- Quality assurance
- Bug tracking systems such as Bugzilla

Reading

Assignment/Lab
Track bugs and continue app development
Each team meets with their client

Week 11 – Managing Meetings
- Status meetings
- Reporting status to management
- Project team meetings

Reading
Rothman: Chapter 10

Assignment/Lab
Continue app development
Each team meets separately with the instructor

Week 12 – Creating and Using a Project Dashboard
- Measure progress toward project completion
- Develop a project dashboard for clients
- Use a project weather report

Reading
Rothman: Chapter 11

Assignment/Lab
Continue app development
Create a project dashboard

Week 13 – Beta Release
- Managing beta releases
- Enlisting beta testers
- Use tools such as TestFlight

Reading
Website: https://testflightapp.com/

Assignment/Lab
Continue app development
Add beta testers

Week 14 – Completing a Project
- Managing all releases
- Shepherding the project to completion
**Reading**
Rothman: Chapter 15

**Assignment/Lab**
Continue app development
Each team meets separately with the instructor

**Week 15 – Demonstrating a Project**
- How to present your app to your client
- Technical issues and how to avoid them

**Assignment/Lab**
Practice demos of the group apps and presentations

**Final Project**
- Each group will give a presentation and demonstrate their app to the client, the instructor, and the other students
- Each group will present their app during the final exam time

**Date, Time, and Place**
According to the final exam schedule