Mobile Computing (iOS)
CS 371L
Spring 2022

[51470]:  TTh 9:30 am - 11:00 am  (Location: RLP 1.106 or online)

Instructor: Dr. William C. (Bill) Bulko  (bulko@cs.utexas.edu)
Office:  GDC 4.308
Phone:  512-471-7021
Office Hours:  posted at http://www.cs.utexas.edu/~bulko/

TA: Name, email address, and Office Hours posted on Piazza

Course Website:  http://www.cs.utexas.edu/~bulko/2022spring/371L.html

Course Prerequisites: Upper-division standing; experience with an object-oriented programming language such as C++ or Java. Credit with a grade of at least C- or registration in Computer Science 439 or 439H.

Course Textbook: None.

University Calendar: Key dates are listed at http://registrar.utexas.edu/calendars/21-22.

Course Objectives:
This course is an overview of mobile computing. By the end of the course, students will be able to understand and articulate the unique challenges of developing software for mobile devices, and be able to develop simple applications for the iOS operating system. Students will complete a major project. Topics will likely include, but are not limited to, the Xcode development environment, the Swift language, user interfaces, maps, audio, networking, graphics, data storage, and localization. As part of the prerequisite, it is assumed that you know an object-oriented programming language such as C++ or Java.

General Policies:

• Your performance in this class will be determined by you! It will require a strong dedication to learning the material, and may require a substantial time commitment to complete the semester programming project.

• Class attendance is mandatory. You are expected to show up on time for class, and stay for the whole lecture. Since there is no required textbook, the class lectures will often be your primary source of information necessary to complete your homework assignments and project.

• Recordings of the lectures will NOT be made available to students, even if we are using Zoom for social distancing. In previous semesters, we recorded lectures to support students who might be in different time zones. However, the direction given by the University is for all lectures to be in person.

• Cell phones must be silenced and put away for the entire lecture unless use is approved by the instructor. You may not make or receive calls on your cell phone, or send or receive text messages during lectures.

• You are responsible for all material posted to the web site and sent as email. Ignorance of such material is no excuse. You are responsible for all material presented in the lectures.

• Religious Holy Days: by UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, I will give you an opportunity to complete the missed work within a reasonable time after the absence.
Your conduct in class should be conducive towards a positive learning environment for your classmates as well as yourself.

Grading Procedures:

Your performance in this class will be evaluated using your scores for 10 programming assignments, plus artifacts associated with a semester programming project. Homework will be graded by the TA, and the scores will be entered on Canvas. Check your scores regularly on Canvas to make sure that we have entered them correctly. If you wish to dispute a grade, you have one week from the date the grade is posted to do so. Send your TA an e-mail and see if you can resolve your differences. If you cannot resolve your differences, you may send me an e-mail explaining the situation. We will not entertain any grade disputes after one week.

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<th>Component</th>
<th>Points</th>
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<tr>
<td><strong>Homework assignments:</strong></td>
<td></td>
</tr>
<tr>
<td>HW1</td>
<td>35</td>
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<td>HW2</td>
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<td>HW9</td>
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<td>HW10</td>
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<tr>
<td><strong>Semester Project:</strong></td>
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<tr>
<td>Proposal Document</td>
<td>75</td>
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<tr>
<td>Design Document</td>
<td>75</td>
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<tr>
<td>Alpha Release</td>
<td>100</td>
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<tr>
<td>Beta Release</td>
<td>100</td>
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<tr>
<td>Final Release</td>
<td>150</td>
</tr>
<tr>
<td><strong>Project Journal (10 entries @ 15 points each)</strong></td>
<td>150</td>
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<td><strong>Total</strong></td>
<td>1000</td>
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Due dates for each of the items in the above table will be posted on the course website.

Homework:

Homework is an individual effort, not a team assignment, and must be worked on individually. Turn in your assignments on time. This permits grading to start promptly after the submission deadline so that assignments maybe returned promptly. You can turn in homework assignments up to 24 hours late for a 10% penalty, or up to 48 hours late for a 20% penalty. After 48 hours past the deadline, your assignment will not be graded and you will receive a zero.

For all assignments, a .zip file of the project folder must be submitted using Canvas. Remember to keep a copy of your source code somewhere, unedited after you submit it. This will be useful in cases where your program gets lost or corrupted, and the timestamp on the file can be used to prove you completed the assignment on time.

Assignment Identification: All assignments must be submitted with the proper file name, in the format LastnameFirstname-HW#.zip. (This format will be repeated in the assignment.)
Assignments which do not match the requirements will have the grade reduced by 5% of the maximum grade.

**Project:**
During the semester, you will work as part of a four-person team to design and develop a mobile application on the iOS platform using Swift. Over the course of the semester, there will be key checkpoints at which you will be expected to complete several deliverables:

- **Proposal Paper:** a paper that describes the application your team intends to design and build.
- **Design Paper:** a paper the visually illustrates the user interface of the application, along with brief descriptions of each screen’s functionality.
- **Alpha Release:** a preliminary release of your application illustrating the user interface, along with partial functionality. A clear “work in progress”.
- **Beta Release:** the second release of your application, demonstrating most of the application’s functionality. An unfinished, unpolished version of your application. (Note that this is not the traditional software engineering definition of a "beta release").
- **Final Release:** the final version of your project. Your team will create and deliver a Powerpoint presentation to the class, along with a demo of the application.

Project deliverables are a team effort, not individual assignments. **Late project deliverables will not be accepted.**

**Important:** On each phase of the project, students on a team may receive different grades based on their relative contribution. Moreover, since in a group project, students are heavily dependent on each other for success, if feedback from teammates indicates that a member of a team contributed little or nothing to any phase of the semester project, that member's grade for previous phases may be reduced retroactively as appropriate. Note that in extreme cases, this may result in failure of the course.

**Project Journal:**
In addition, you will be expected to maintain a *Project Journal* in which, on a weekly basis, you document overall progress on your project, your personal contribution, issues or challenges faced, and personal concerns about the project or team. **Late journal entries will not be accepted.**

More detail on all deliverables, including requirements and grading criteria, will be provided in advance of each due date.

**Exams:**
There are no exams and no final exam for this course.
Final Grades:
There is no curve in this course. A standard plus/minus system will be used to calculate final grades.

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<tr>
<th>Percent</th>
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<tr>
<td>94+</td>
<td>A</td>
<td>940 - 1000</td>
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<tr>
<td>90 - 93</td>
<td>A-</td>
<td>900 - 939.9</td>
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<tr>
<td>87 - 89</td>
<td>B+</td>
<td>870 - 899.9</td>
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<tr>
<td>84 - 86</td>
<td>B</td>
<td>840 - 869.9</td>
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<td>80 - 83</td>
<td>B-</td>
<td>800 - 839.9</td>
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<td>77 - 79</td>
<td>C+</td>
<td>770 - 799.9</td>
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<td>74 - 76</td>
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<td>0 - 59</td>
<td>F</td>
<td>0 - 599.9</td>
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Academic Integrity:

University of Texas Honor Code: the core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community. Each student in this course is expected to abide by this code. Any work submitted by a student in this course for academic credit will be the student's own work.

Study Groups

• Students may not acquire from any source (for example, another student or an internet site) a partial or complete solution to a problem or project that has been assigned.

• This course will require you to collaborate on a semester project with some of your classmates. You are free to openly discuss project specifications, interfaces, etc., with your teammates but ultimately, your work must be your own.

• Helping a friend understand the intent of a homework assignment is permitted. Helping a friend complete the assignment is not.

• Students who work together too closely (e.g. design their solution together) should be aware that this is a form of cheating called collusion and is subject to academic penalties. Cooperation should never involve one student having possession of a copy of all or part of work done by someone else, in the form of an e-mail, an e-mail attachment file, a diskette, or a hard copy.

• If you are unsure about how to work together with your friend in a legal, helpful manner, do come and talk with us. Remember, it is always okay to "work together" with your professor or TA!

• You are responsible for turning in your own work on all assignments. Unauthorized collusion is not allowed and constitutes a violation of the university's policies on academic integrity.

• You are responsible for protecting your work from being copied by others. Should copying occur, both the student who copied work from another student and the student who gave material to be
copied will both automatically receive a zero for the assignment. Penalty for violation of this Code can also be extended to include failure of the course and University disciplinary action.

• During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in failure of the exam, and may lead to failure of the course and University disciplinary action.

• **Do not post solutions to any problems on Piazza.**

The homework, programs, and exams must be the work of students turning them in. University policy (see Dean of Students' policies on academic integrity) will be followed strictly. We will be running a sophisticated program on all submitted assignments to detect plagiarism. If we do detect any cases of academic dishonesty, we will assign a grade of F to all students involved and refer the cases to the Dean of Students.

Acts that exceed the bounds defined by the approved collaboration practices will be considered cheating. Such acts include:

• Copying solutions, code, or programs from someone else, or giving someone else your solutions, code, or programs.

• Participation in a discussion group that develops a solution that everyone copies.

• Posting your code to homework problems on the internet (including Piazza and Facebook).

• Copying solutions to homework problems from the internet (e.g. from Piazza or Facebook or other internet sites). Note that this course is unique in that you are encouraged to take advantage of tutorials and sample code available on the internet, but only as templates, not solutions.

• Employing someone to write the solutions for you on homework assignment problems.

I urge everyone in the class to take appropriate measures for protecting your work. You should protect your files, printouts, notes, etc. as deemed reasonable.

**General University Notices and Policies**

**Use of E-mail for Official Correspondence to Students:** All students should become familiar with the University's official e-mail student notification policy. It is the student's responsibility to keep the University informed as to changes in his or her e-mail address. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week. The complete text of this policy and instructions for updating your e-mail address are available at [http://www.utexas.edu/its/help/utmail/1564](http://www.utexas.edu/its/help/utmail/1564).

**Documented Disability Statement:** Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities (SSD). Faculty are not required to provide accommodations without an official accommodation letter from SSD.

• Please notify me as quickly as possible if the material being presented in class is not accessible (e.g., instructional videos need captioning, course packets are not readable for proper alternative text conversion, etc.).

• Contact Services for Students with Disabilities at 471-6259 (voice) or 1-866-329-3986 (video phone) or reference SSD’s website for more disability-related information: [http://ddce.utexas.edu/disability](http://ddce.utexas.edu/disability).

**Behavior Concerns Advice Line (BCAL):** If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual’s behavior. This service is provided through a partnership among the Office
of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit http://www.utexas.edu/safety/bcal.

**Q drop Policy:** The State of Texas has enacted a law that limits the number of course drops for academic reasons to six (6). As stated in Senate Bill 1231:

“Beginning with the fall 2007 academic term, an institution of higher education may not permit an undergraduate student a total of more than six dropped courses, including any course a transfer student has dropped at another institution of higher education, unless the student shows good cause for dropping more than that number.”

**Emergency Evacuation Policy:** Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation:

- Familiarize yourself with all exit doors of the classroom and the building. Remember that the nearest exit door may not be the one you used when you entered the building.
- If you require assistance to evacuate, inform me in writing during the first week of class.
- In the event of an evacuation, follow my instructions or those of class instructors.

Do not re-enter a building unless you’re given instructions by the Austin Fire Department, the UT Austin Police Department, or the Fire Prevention Services office.

**Classroom Safety and COVID-19:** When this class meets in-person, we will be in the classroom listed in the course schedule and at the top of this syllabus. When we meet virtually, the links will be available in the Zoom tab of Canvas.

- Adhere to university mask guidance.
- Vaccinations are widely available, free, and not billed to health insurance. The vaccine will help protect against the transmission of the virus to others and reduce serious symptoms in those who are vaccinated.
- Proactive Community Testing remains an important part of the university’s efforts to protect our community. Tests are fast and free.
- Visit protect.utexas.edu for more information.