Elements of Mobile Computing
CS 329E
Fall 2024

[50375]: MWF 9:00 am - 10:00 am (Location: GDC 5.302)
[50380]: MWF 10:00 am - 11:00 am (Location: GDC 5.302)

Instructor: Dr. William C. (Bill) Bulko (bulko@cs.utexas.edu)
Office: GDC 6.402
Phone: 512-471-7021
Office Hours: posted at http://www.cs.utexas.edu/~bulko/

TA: Name, email address, and Office Hours posted on Ed Discussion

Course Website: http://www.cs.utexas.edu/~bulko/2024fall/329E.html

Course Prerequisites: Computer Science 313E, 314, or 314H with a grade of at least C-.

Course Textbook: None.

University Calendar: Key dates are listed at http://registrar.utexas.edu/calendars/24-25.

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. Topics will likely include, but are not limited to, the Xcode development environment, the Swift language, user interface design, camera, networking, motion, location, gestures, and data storage. As part of the prerequisite, it is assumed that you know an object-oriented programming language such as Python.

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 assignments.
- Classes will be recorded for the convenience of those who must miss class for a legitimate reason, and so you can rewatch demos done in class. However, remember they are no substitute for attending the live lectures, since you cannot see anything written on the whiteboard, and you often cannot hear discussion that takes place in the classroom. Recordings will be automatically posted on the Lectures Online tab in Canvas.
- 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 class mates 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.***

Canvas can be flaky, so do not assume that the "Total" column in Canvas accurately reflects your grade in the course. Instead, you should reference the following table:

Component	Points
Homework assignments:	
HW1	70
HW2	70
HW3	70
HW4	70
HW5	70
HW6	70
HW7	70
HW8	70
HW9	70
HW10	70
Semester Project:	
Design Document	100
Final Release	200
Total	1000

Due dates for each of the items in the above table will be posted in Canvas and on the course website.

Homework:

Homework is an individual effort, not a team assignment, and must be worked on individually. To turn in your homework, submit a .zip file of the project folder using Canvas. We will not accept homework turned in via e-mail. All assignments must be submitted with the proper file name, in the format `LastnameFirstname-HW#.zip`. Assignments which do not conform to this requirement will be penalized. 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.

Slip Days for Homework:

We do not give extensions on homework assignments. Instead, we use a "slip day" system to manage late homework. Slip days are intended to help you manage emergencies, acute illnesses, conflicts with other classes, and other life circumstances outside of class. You can earn up to five slip days at the start of the semester by completing the syllabus quiz on time and answering the questions correctly. DO NOT waste them.

Slip days only apply to homework assignments; they do not apply to project deadlines. Each slip day enables you to turn in your assignment up to 24 hours late. You may use a maximum of 2 slip days on any given assignment. Slip days cannot be broken into smaller pieces; you either use a slip day for a 24-hour extension, or you don't.

The 24-hour clock includes weekends and vacation days. For example, if an assignment is due at 11:59 pm Friday night, you can use one slip day to extend the deadline to 11:59 pm Saturday, and a second slip day to extend it to 11:59 pm Sunday night. If you do not turn it in by then, you will receive a zero for the assignment.

Once you use up your slip days for the semester, late programming assignments will not be accepted for any reason; in other words, all late assignments will receive a score of zero.

You cannot use slip days to extend a deadline past the last day of classes.

We will automatically apply slip days to late assignments unless you tell us otherwise. It is your responsibility to know how many slip days you have remaining.

Project:

During the semester, you will design and develop a mobile application on the iOS platform using Swift. Your app must meet specific technical requirements. There will be two checkpoints at which you will be expected to complete several deliverables:

- *Design:* a paper that describes the application you plan to construct, and visually illustrates the user interface of the application, along with brief descriptions of each screen's functionality.
- *Final Project*: the final version of your project.

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

Project deliverables are an individual effort, not a group assignment. **Late project deliverables will not be accepted. Slip days do not apply to the project.**

Exams:

There are no exams and no final exam for this course.

Final Grades:

A standard plus/minus system will be used to calculate final grades. There is no curve.

Percent	Letter Grade	Point Range
94+	A	940 - 1000
90 - 93	A-	900 - 939.9
87 - 89	B+	870 - 899.9
84 - 86	B	840 - 869.9
80 - 83	B-	800 - 839.9
77 - 79	C+	770 - 799.9
74 - 76	C	740 - 769.9
70 - 73	C-	700 - 739.9
60 - 69	D	600 - 699.9
0 - 59	F	0 - 599.9

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 on homework assignments (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..
- **Do not post solutions to any problems on Ed Discussion or any other social media.**

Homework and projects 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 Ed Discussion and Facebook).
- Copying solutions to homework problems from the Internet, such as from "cheater" websites like Chegg or Course Hero. 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 .**

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.

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.