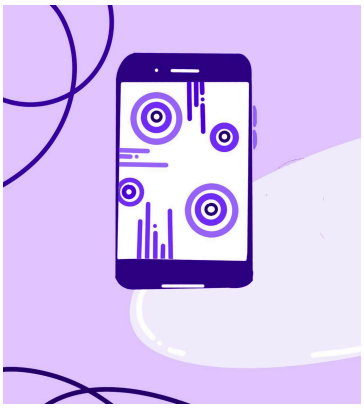


CSE 340 - 25sp: Interaction Programming

Syllabus | Course Staff | Calendar

EdStem | Gradescope | Canvas | Course Resources

Learning Objectives

By the end of this course, students will be able to:

- Describe different human needs and abilities and how those should inform user interface design, adaptability, and evaluation
- Design and implement user interfaces for mobile applications, including interfaces with custom components.
- Audit user interfaces for their accessibility by people with different abilities.
- Use reactive programming patterns to manage application state with immutable data
- Use model-view-controller and observer-style architectures
- Design and implement custom interface layout algorithms
- Program in Dart and Flutter

Lecture and Section Schedule and Locations

	When		**Where**
Lecture	Mon, Wed, Fri	10:30-11:20 am	CSE2 G10
Sections	Thursday	AA: 11:30 – 12:20 PM	GUG 218
		AB: 1:30 – 2:20 PM	ECE 045
		AC: 12:30 – 1:20 PM	ECE 045

Participation in lecture and section are mandatory for full credit.

Office Hours

	All times in Pacific time						
	Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
8:30							
9:00		Joann (CSE2 150)					
9:30							
10:00			Joann (CSE2 150)				
10:30		Class time CSE2 G10		Class time CSE2 G10		Class time CSE2 G10	
11:00			Avni (CSE2 121)				
11:30				Lauren (CSE 552)	Section AA GUG 218		
12:00			Bess (CSE2 121)				
12:30		Dhruv (CSE2 121)			Section AC ECE 045		
1:00			Elise (CSE2 150)			Sam (CSE2 121)	
1:30					Section AB ECE 045		
2:00							
2:30				Bess (CSE2 121)	Dhruv and Avni (CSE2 121)		
3:00							
3:30							
4:00					Lauren (CSE 552)		
4:30							
5:00							

Note on formatting: Note: Each row contains the times from its label until 30 minutes after. For example, the box labeled "8:30" corresponds to 8:30 - 9:00 AM

Course staff

Instructor: Dr. Lauren Bricker (she/they)
Prof. Bricker or Lauren is also fine

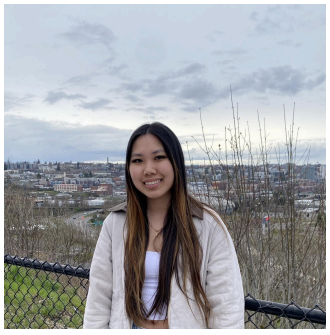
Instructor: Dr. R. Benjamin Shapiro
Calling him Ben is fine

TA (section AA)**:**
Dhruv Bansal (he/him)

TA (section AA)**:**
Bess Hooper (she/her)

TA (section AB)**:**
Avni Rao (she/her)

TA (section AB)**:**
Sam Ross (she/her)



TA (section AC)**:**
Joann Nguyen (she/her)

TA (section AC)**:**
Elise Poniman (she/her)

Syllabus

Grading

% of Grade	Component
20%	In-lecture and in-section participation
50%	Homework assignments
10%	Peer audit *thoroughness* and *timeliness*
20%	Final Project

All deadlines for this class are at 10:00 PM. We know some courses use midnight deadlines. We also frequently hear from students who lament that they do not get enough sleep. We prefer earlier deadlines as a way to encourage you (and ourselves) to get more sleep.

Extensions

The teaching team is happy to provide extensions **in response to emergencies** (only). Please contact us (see Communications, below) to request such exceptions as soon as you are able. If at all possible, you should do this before the assignment deadline.

We discourage submitting work late, as this limits the amount of feedback we can give you to help you to learn more. However, assignments may be submitted late by following the resubmission process for this course (see next section). Note that resubmissions can only be used for assignments for which feedback has been released– for most assignments, this means you will not be able to use a resubmission until at least one week after the initial due date.

Resubmission policy

Learning from mistakes is an important part of mastering any skill. To enable this, you are allowed to revise and resubmit your work on any assignment in order to demonstrate improvement after your initial submission. Note that class work (participation) and the final project are not subject to the resubmission policy.

Resubmissions are subject to the following rules:

- You may not resubmit an assignment until feedback has been released for that assignment (typically about a week after the initial deadline)
- Resubmissions must be submitted through a provided form, and must be accompanied by a short write-up describing the changes made. This will both support you in being deliberate about the changes you make and ease grading of resubmissions by making the changes clear.

    - In addition to the form, your updated assignment materials must be resubmitted through Gradescope. The course staff will re-open a Gradescope assignment to accept late work once feedback has been released and the resubmission form for that assignment has been opened.
    - Code must be committed to your Gitlab repo and turned in through the Gitlab submission button.
- A maximum of one assignment can be resubmitted per student per week.
    - Resubmission cycles will be on Thursday at 10:00pm.
- You may only resubmit an assignment once.
- You may only resubmit an assignment within the resubmission cycle that immediately follows grades/feedback on that assignment being initially released.
- We will not accept resubmissions or provide extensions on the final project, nor on peer audits.
- An assignment that has been found to involve academic misconduct may not be resubmitted.
- As with regrades, when you resubmit an assignment, we will look at the entire assignment. Therefore, it is possible for your grade to go either up or down through this process. We recommend you carefully re-read the specification as well as our feedback before resubmitting.

Note that it is in your best interest to correctly submit something that demonstrates progress by the due date, then continue to work on the project and do a resubmission after you have received feedback. That way you will get at least one round of feedback which you can use in your resubmission.

Regrade Policy

Reflecting on feedback is one of the most valuable ways you can learn from your mistakes, and we encourage you to do so. If you have a question about a grade you received or if you feel the grade you received is incorrect, please email an instructor for an appointment to discuss the assignment and your grade in detail.

It is also possible for the graders to make mistakes. If that happens we certainly would like to correct the error. Please note the following: When you request a regrade, we may look at the entire assessment, homework or reflection. Therefore, it is possible for your grade to go either up or down through this process.

We will be using Gradescope to grade almost all of your assignments. Gradescope has a mechanism to manage regrade requests, including the length of time regrades will be accepted. Regrade requests for assignments must be submitted within one week of when the grade was provided to you.

- Follow the Gradescope instructions on how to submit a regrade request.
- You must submit any requests separately for each problem with an explanation of why you want this problem regraded. Remember the more detail you provide the more likely we will be to give you an accurate response to the regrade request.

- We suggest you also post a private message on Ed to the instructors that you are requesting a regrade, particularly if there are many parts to it.

Disability Accommodations

We are happy to provide whatever disability accommodations we can to support your success in this class. That includes both permanent and temporary health conditions (mental or physical). You do not need to disclose your conditions to us.

If you have an accommodation letter from DRS, please share it with your instructors (see Communications, below). The instructors may share details about your accommodation needs with the teaching team for the purposes of ensuring that we can work together to support you.

Even if you do not have an official disability diagnosis or accommodation from UW, you may also request accommodations. Please contact the instructors (see Communications, below) to discuss this. You do not need to share your medical or mental health details to make such a request.

Religious Accommodations

People of all faiths, or none, are welcome in this course. When you complete the Attendance and Conflicts form, please indicate the dates of religious events that are pertinent to your faith, and describe what accommodations would best support you. We will do all we can to address your needs. To ensure that we fully comply with UW's Religious Accommodations Policy, you must also submit a Religious Accommodations Request within the first two weeks of this course.

Extenuating Circumstances

We recognize that our students come from a wide variety of backgrounds and can have widely-varying circumstances. Extenuating circumstances can include physical or mental health and wellness, work-school-life balance, familial responsibilities, military duties, unexpected and unavoidable travel, or anything else beyond your control that may negatively impact your performance in the class.

If you have any unforeseen or extenuating circumstances that arise during the course, please do not hesitate to contact the instructors to discuss your situation as soon as possible. The sooner we are made aware of the situation, the easier it can be resolved and the more likely we will be able to offer flexibility.

While we will make every effort to support and accommodate students experiencing difficulties, we are far more likely to be able to assist before a deadline has passed than after.

Academic Integrity

Academic integrity is an important value that we adhere to in this class. Please read and comply with the Allen School's guidelines on academic conduct.

You may use whatever online or in-person documentation, tutorials, or other resources you wish to do the assignments for this class. **However, the work you submit must be substantively and entirely (or nearly entirely) your own**.

Here are examples of acceptable uses of online resources:

- Downloading a book about Flutter and following along with its examples to figure out how to create a stateful widget
- Using generative AI to get help fleshing out the color scheme for a custom widget
- Browsing code on github to see how others have implemented similar functionality

Here are examples of unacceptable conduct:

- Asking your friend to do your homework for you
- Asking generative AI to generate an entire widget or program for you
- Copying code from github or other online resources and changing a few things here and there to make it match your goals without crediting the github author
- Using generative AI to answer reflection questions.

We recognize that there is a gray area between the first (acceptable) generative AI example and the second (unacceptable) generative AI example. We do not want to prohibit you from making use of helpful tools, but also want to ensure that you are learning all you can from this course. Here are some rules of thumb that you may find helpful:

- You should be able to explain the reasoning behind every line of code (or documentation) that you submit.
- At least 90% of the tokens in your programs should be typed by you.
- If you are unsure whether something is allowable, be conservative.
    - If you want help navigating this uncertainty, ask the instructors for guidance.
- When making use of others' code, or AI-generated code, you **must** document that you have done so in your project README (or elsewhere, if specified in the assignment).

Communications

We want you to succeed in this class, and an important way that you do that is by asking questions and discussing course issues with your peers and teaching staff. Some ways to do that include:

- Using the class Ed discussion board (link above), where you can make public posts that benefit the whole class, and are answered more quickly because your fellow students can help the course staff by responding too.
    - This is the best way to ask questions about things like homework and programming.

    - Before posting, please search through the questions that have already been posted in case someone has already asked the same question.
- Attending office hours – we hold them both in-person and over zoom.
- If none of the office hours times work for you, you can also discuss matters with us privately on the Ed discussion board. Using Ed notifies the whole course staff at once and is faster than email.

If you need to discuss something of a more personal nature (i.e. not homework help) and none of these forms of communication work for you, you can send an email to both Prof. Shapiro AND Professor Bricker.

Remote Instruction

Zoom

Zoom will be used for some number of office hours or special sessions, but lecture and section will generally be in person.

Guidelines and Expectations

Students are expected to adhere to the following expectations for remote instruction in CSE 340. These guidelines are intended to help class go more smoothly, facilitate questions and group activities, and foster a sense of community within the class.

Illness
Do not come to class if you are ill. Instead, let the instructional team know (post a private message on Ed) and make use of the lecture recordings. If you do this in advance of class, we will make sure that you are not penalized for missing any live, in-class participation.

Inclusivity
Our goal is to make CSE 340 a welcoming environment for all. We are working toward using a broad base of examples in our course material. Please let us know if you see an opportunity to improve our course materials to be more representative of our student population.

Additionally, if you experience interactions with anyone that you feel are excluding you or otherwise make you uncomfortable, contact the professor immediately so that we can address the situation. Should you feel uncomfortable bringing up an issue with a staff member directly, there are a number of Community Feedback Mechanisms and Resources including the Anonymous Feedback form, but understand we can not respond to you directly if you use the latter.

Sexual Harassment

University policy prohibits all forms of sexual harassment.

- If you feel you have been a victim of sexual harassment or if you feel you have been discriminated against, you may speak with your instructor, teaching assistant, the chair of the department.
- You can also file a complaint with the UW Ombudsman's Office for Sexual Harassment. Their office is located at 339 HUB, (206)543-6028. There is a second office, the University Complaint Investigation and Resolution Office, who also investigates complaints. The UCIRO is located at 22 Gerberding Hall.

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Schedule of Topics and Assignments

See the calendar for weekly details.
Assignment details will be posted on Ed and will be submitted on Gradescope.

Week 1

Topics Covered

- Course information and policies
- Dart crash course
- Getting your devices setup for development (in section)

Assignment:

- Setup your computer and mobile devices for development
- Homework 0 surveys (in Edstem)
- Assignment 1: Dart 101

Week 2

Topics Covered

- Flutter User Interfaces are Widget trees
- Flutter layout
- Storing state with Provider
- Getting familiar with Flutter and git tools (in section)

Assignment:

- Assignment 2: Flutter 101 (Nametag)

Week 3

Topics Covered

- Properties of People – Vision
- Accessibility

- Model View Controller patterns
- Timers
- Auditing accessibility (in section)

Assignment:
- Assignment 3: Fake Calculator
- Peer Audit: Calculator

Week 4

Topics Covered
- Async IO & Navigation
- Robustness
- Properties of People II - motion
- Calculator audits (in section)

Assignment:
- Assignment 4: Weather app

Week 5

Topics Covered
- Designing apps
- Higher order functions
- Stateless vs Stateful widgets
- Layout wireframes (in section)

Assignment:
- Assignment 5: Food Finder

Week 6

Topics Covered
- Reactive programming & Event handling
- Time travel
- Local persistence and storage
- Stateful and stateless widget practice (in section)

Assignment:
- Assignment 6: Journal
- Peer audit: Journal

Week 7

Topics Covered

- Painting with Canvas/Drawing
- Undo and Redo
- Sensors (in section)

Assignment:

- Assignment 7: Drawing app
- Final project: form teams and brainstorm goals

Week 8

Topics Covered

- Using APIs
- SUS testing
- Final project requirements

Assignment:

- Final project design document

Week 9

Topics Covered

- Final project status checks

Assignment:

- Final project checkpoint

Week 10

Topics Covered

- Final project status check
- Course Feedback
- Final project presentations

Assignment:

- Final project code and write up
- Final project presentations

Acknowledgements

We thank Prof. Jen Mankoff for originally creating this course and Prof. Lauren Bricker for keeping it fresh and collaborating with Prof. Shapiro on the redesign of this course in Spring 2024. We are grateful to the many students and TAs who have taken and/or taught it over the years. Their experiences and feedback inform how we are teaching this class now.

The University of Washington acknowledges the Coast Salish peoples of this land, the land which touches the shared waters of all tribes and bands within the Duwamish, Puyallup, Suquamish, Tulalip and Muckleshoot nations. Please learn more about native lands.