Syllabus FAQs for CSCI 4849/5849

What's this class about?
This is an advanced course in human-computer interaction that focuses on the *input and output methods* used by our computing systems.

We'll learn about how to talk about different types of input and output methods, and how to design systems that are usable with multiple types of input and output modes.

We'll also explore issues of *inclusion* and *exclusion* in our computing systems. We will learn about how some people, such as people with disabilities, may be excluded from using everyday technologies. We'll learn how to design technologies that include these users.

What will we do in class?
We will study different types of input and output devices, from mainstream devices (keyboards and mice) to alternative devices (eye trackers). We'll build UI prototypes and test them with different types of devices. We'll design, prototype, and test prototypes for a diverse set of input and output methods.

What HCI background should I have?
Life will be easier if you have some background in HCI, such as from CSCI 3002 or CSCI 5839. I'll provide some catch-up reading for those who are new to this field.

What sort of technical things will we do?
We will build prototypes using HTML, CSS, and JavaScript. Lots of help will be available at first. We'll try out some technologies that will be new to almost everyone, such as designing Alexa skills. There are some independent projects that will involve building on these skills and skills you already have.

The course is designed to support students with a range of tech backgrounds. If you're unsure about something; ask!

Where do I go to access course materials?
All course materials are on Canvas.

What are the graded activities?
Each week there will be assigned reading with a brief and easy quiz. Most weeks we'll have an in-class activity that we start in class and you'll finish on your own. There are three big projects: a touch-based GUI app, a voice agent, and an arcade game with alternative input.

Is this class difficult?
Sometimes CS students think of HCI classes as easy. In this class there aren't many things that are conceptually hard. However, there are a number of assignments. There is a fair amount of reading. Some projects require multiple iterations or collecting data from test users.

How are assignments graded?
For HCI projects, simply following instructions does not guarantee a perfect score. Projects need to show that you applied techniques from the course, tested your project with real people, and iterated based on user feedback. Most assignments are graded on a Check/+/- scale, with "adequate" projects receiving a Check and projects that show creativity and iteration receiving Check+.

How do I get an A?
Complete all of the assignments. Make sure that your assignments meet the criteria in the assignment rubric. Start projects early so that you can iterate on them and show progress.

What other policies should I know about?
No late assignments are expected (but some low-scoring assignments may be dropped). All of your assignments must be accessible (we'll learn how). You must cite all resources you use in your project or you will lose points.

So, can I skip the rest of the syllabus?
Nope! I'm expecting that everyone will have read the entire syllabus, which describes grading policies, other course policies, and important university policies (like the honor code and anti-harassment policies) in detail.

CSCI 4849/5849: Input, Interaction, and Accessibility
Spring 2019

Syllabus Version 1.0 (January 13, 2019)

Course Details

Meeting time: Monday/Wednesday, 4:30-5:45pm
Location: ITLL 1B50
Class web site: canvas.colorado.edu/courses/25422

Instructor

Who? Shaun Kane, Assistant Professor, Department of Computer Science
Email: shaun.kane@colorado.edu
Web site: shaunkane.com
Office hours: Thursdays 11am-12pm in DLC 173, or by appointment

Required Materials

- Sketchbook and pencils/pens
- Laptop (for some in-class activities). Some activities may be completable with a mobile device, please check ahead.
- A Github account (available for free at github.com)
- Official CU email address (all class correspondence should go through this address)
- There is no textbook for the class. Required readings will be posted on the web site.
- We will be watching some videos as part of the class. You may watch the video during the group showing; otherwise you may need to rent the video.

What should I bring to class?
For every class meeting, you should bring the following items:

- Something to take notes with (paper or electronic);
- Paper and sketching materials;
- Laptop or equivalent computing device.

If other materials are needed, we will notify you before the class meeting.

Overview of the Course

In this course, we will explore input and interaction techniques, with an emphasis on universal design and alternative interfaces. Students will explore traditional input methods such as keyboard and mouse input, and alternative techniques such as voice and eye gaze. Students will conduct performance evaluations of existing techniques; and prototype new interaction methods. Students will design technologies to support people with varying abilities and disabilities.

Learning Objectives

Upon the successful completion of this course, you will be able to:

1. Understand the theory and history of computer input and interaction methods;

2. Understand perspectives on designing technology to support people with diverse abilities (assistive technology vs. universal design);
3. Identify common accessibility problems related to computer applications and user interfaces, and to identify solutions to these problems;
4. Understand how to use assistive technologies and to design user interfaces that support people with diverse abilities;
5. Evaluate user interfaces for accessibility with end users;
6. Prototype new interactive technologies using a variety of input methods.

Technical Background

In this class, we will build interactive prototypes of several different types of user interfaces. As part of this work, you will be expected to complete the following tasks.

- Sketching out interaction ideas on paper via drawings and storyboards (we will practice in class);
- Building user interface prototypes using HTML, Cascading Style Sheets, and JavaScript (we will cover the basics in class);
- Posting web sites to Github Pages;
- Installing and testing new software, such as screen reader software;
- Uploading assignments via Canvas, Google Drive, or Github.

We expect that you will have some prior experience with the above items. If you get stuck on some technical hurdle, we strongly encourage you to seek help from the instructor, from other students (in class or via Canvas), or during office hours.

For your project, you are encouraged to incorporate additional technology, although it is not required. We will provide assistance wherever possible.

If you require additional technology resources for your project, please let us know and we will do our best to accommodate you.

Class Communication

We will use Canvas for the majority of our course communication needs. For group assignments, you may choose to communicate using other mechanisms such as email or Slack.

The best ways to reach the instructional staff are via Canvas or through an email. For maximum email findability, begin your email subject line with *[csci4849].*

Information about assignments, due dates, and other aspects of the course will be kept up to date on the Canvas site. I will announce major changes in class as well. You are expected to check email and Canvas regularly to make sure that you are aware of changes. My expectation is that you will check for notifications via Canvas and email approximately once per day during weekdays. If you miss class, you will be expected to find out anything you might have missed.

Assignments and Grading

Your grade in the course will be based on the following components. Note that the number of assignments may change slightly depending on our rate of progress through the course. The grading breakdown differs for graduate and undergraduate students; details are provided below.

1. Weekly reading assignments (25%, ~14 assignments, drop lowest grade)
We will read a variety of book chapters and research papers that document the history of human-computer interaction and contemporary trends in input, interaction, and accessibility. You will complete one reading assignment per week and will complete a brief Canvas quiz as a sanity check. The reading quiz will be due each Monday at 3pm.

2. In-class activities (40%, ~10 assignments, drop lowest grade)
Each week we will complete a mini-assignment that explores the current topic. We will start this assignment in class - in general, you will be able to complete the assignment during class time, but some assignments may require extra time outside of class. These assignments will generally be due the following Wednesday at 3pm. Details of each assignment will be posted on Moodle. If you must miss class, you should still complete the assignment on your own. These assignments are usually individual, in that every student submits their own unique assignment - however, you are encouraged to work with others to brainstorm ideas, solicit feedback, and get help if you are stuck.

3. Projects (30%, 3 assignments)
You will complete three larger projects over the course of several weeks each. These projects shall be done with a partner unless there are extenuating circumstances.

4. Class participation (5%)
Active participation in the class is an important part of how this class works. You are expected to come to class, participate in in-class activities, and take part in other activities related to the class. Some activities may require turning in paper notes or completing in-class response quizzes.

This portion of the grade is graded pass/fail: if you participate in more than 50% of the activities, you will receive the 5 points; if you do not participate at least 50%, you will not receive these points.

5. Research project (grad only, 10%)
Graduate students in the course will be expected to conduct a small pilot evaluation of one of the three course projects, and to write up a description of their evaluation in SIGCHI Extended Abstracts format. For graduate students, the final grade will be calculated out of 110 points (so the other assignments will be scaled down proportionally).

With prior permission, undergraduates may complete this project for extra credit.

Graduate students may also have some additional requirements for specific assignments. These will be specified in the assignment description.

Grading Policies

Due dates
Each assignment will have its due date specified in Canvas. Most reading assignments will be due on Monday at 3pm; most in-class activities and projects will be due on Wednesday at 3pm. You are expected to regularly check for any changes to due dates announced on Canvas or in class.

Late assignments
In the interest of fairness and to disincentivize anyone from falling behind, late assignments will not be accepted barring extraordinary circumstances. Some of the grading categories (reading and in-class) will drop the lowest grade, which should help in case of missing an assignment.

Joining the class late

If you join the class late, you will be expected to complete all uncompleted assignments at their original due date, or within one week of your first class session, whichever is later.

Grading expectations

In contrast to some CS classes, many elements of this class are graded based both on the successful completion of the work as well as the quality of the solution. Assignments that you turn in should show evidence of careful thought, iteration on your initial ideas (i.e., not turning in first drafts), and should be thoughtfully written and presented. If a student turns in an assignment that "checks all the boxes" of the assignment description but is poorly thought out or presented in a sloppy way, that student should not expect a perfect grade on that assignment. Whenever possible I will provide rubrics describing my expectations for each assignment.

Grading scheme

Many of the assignments will follow a (check minus, check, check plus) grading scheme. This grading scheme values the quality of the outcome and the amount of iteration and polish demonstrated in the work, while providing extra points for assignments that show particular attention to detail in addressing the design problem. The grading scheme is as follows:

- **Check Minus (equivalent to C or below):** Assignment is complete but is missing some required component specified in the assignment, or work seems rushed or like a first draft.
- **Check (equivalent to B or B+):** Most good assignments will receive this grade. The assignment is complete and shows thoughtful application of the skills learned in class. This project shows some thought and iteration - this is not your first idea or attempt. Sketches are cleaned up and easy to read.
- **Check Plus (equivalent to A):** These assignments are not only complete but demonstrate high-quality work. These are submissions that go beyond the assignment (e.g., including additional users in your study, including more ideas, or extensively iterating on and polishing your designs).

Expectation of work

This is a 3-credit course, which means that students are expected to work approximately 6 hours per week outside of class. Note that not every week will involve the same workload. Whenever possible, I will provide assignments early so that students can manage their time effectively. If you feel that you are working significantly more than the expected amount of time each week, please come talk to me during office hours.

Schedule

An up-to-date schedule will be maintained on the course web page.

Using Technology in Class

We will take advantage of available technology whenever possible to enrich our learning. However, technology use can also be a detriment to the classroom experience, not just for you but for other students around you. If I see that you are using technology to the detriment of others' learning, I will ask you to stop. If the problem continues, I will ask you to leave the class meeting.

Citing Sources

Much of the work we do in this class involves drawing from other resources, including open source code or libraries, online data sources, online images, video, or sound files, etc. In general, it is OK to

use these sources. However, it is important that you cite any external sources used in any of your assignments. For each assignment, we will request a list of sources used. It is important that you cite all external sources you use in your assignments and provide links back to them. If your assignments are missing citations to work, you may lose points on the assignment, or we may return the assignment without a grade.

Accessible Materials

A core theme of this course is exploring how computing can help make a more fair, inclusive, and equal world. Thus, we will strive to make sure that all of our work in the class is as widely accessible as possible. Throughout the semester, we will discuss ways to make our creations more accessible. Where appropriate, we will specify accessibility requirements for specific class assignments. Failing to meet these accessibility requirements may result in a reduced grade.

Right to Revise

I reserve the right to revise the syllabus throughout the semester. In general, if I am considering making a change to an assignment or due date, I will discuss it with the class first. If I decide to make any changes to the syllabus or grading, each student will have the opportunity to opt in to the changes, or to opt out and follow the earlier version of the syllabus.

University Statements

These statements are provided by the university. Although they are not specific to this course, I expect that you will read and familiarize yourself with these policies.

Disability Accommodations

If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu. If you have a temporary medical condition or injury, see the Temporary Injuries guidelines under the Quick Links at the Disability Services website and discuss your needs with your professor.

Religious Observances

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments, or required attendance. Please send me e-mail or visit me in office hours to notify me of such a situation at least one week in advance of the event so that we can make alternative arrangements. See the campus policy regarding religious observances for full details.

Classroom Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that

I may make appropriate changes to my records. For more information, see the policies on classroom behavior and the student code.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

The University of Colorado Boulder (CU Boulder) is committed to maintaining a positive learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, discrimination, harassment or related retaliation against or by any employee or student. CU's Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU Boulder's Discrimination and Harassment Policy prohibits discrimination, harassment or related retaliation based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the OIEC website.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the academic integrity policy of the institution. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council. Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at honorcode.colorado.edu.