CS 352 Introduction to Usability Engineering

Credits: 4

This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits.

Instructor name: Hannah Scott

Instructor email: scothann@oregonstate.edu (best way to contact me)

This syllabus and schedule are subject to change in the event of extenuating circumstances.

Course Introduction

Basic principles of usability engineering methods for the design and evaluation of software systems. Includes the study of human-machine interactions, user interface characteristics and design strategies, software evaluation methods, and related guidelines and standards.

Prerequisites: CS 151 with C or better or CS 161 with C or better or ENGR 103 with C or better or CS 295 with C or better or ECE 151 with C or better

Equivalent to: CS 252

Technical Assistance

If you experience any errors or problems while in your online course, contact 24-7 Canvas Support through the Help link within Canvas. If you experience computer difficulties, need help downloading a browser or plug-in, or need assistance logging into a course, contact the IS Service Desk for assistance. You can call (541) 737-8787 or visit the IS Service Desk online.

Learning Resources

This course does not have a required textbook. Reading assignments will be provided in the form of lectures, articles online through OSU’s library, and other online resources.

Course Learning Outcomes

At the completion of this course, students will be able to:

1. Describe the human-centered design process and usability engineering process and their roles in system design and development.
2. Discuss usability design guidelines, their foundations, assumptions, advantages, and weaknesses.
3. Describe the basics of human subject's research.
4. Complete a basic human subject's research certification form.
5. Design a user interface based on an analysis of human needs and prepare a prototype system.
6. Assess user interfaces using different usability engineering techniques.
7. Make a presentation that justifies design decisions.

## Course Content and Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Due Tues</th>
<th>Due Fri</th>
</tr>
</thead>
</table>
| 1    | The Human-Centered Design Process  
Your Research and Design Project  
Usability and Mental Models  
Usability Heuristics | Syllabus Quiz (Individual)  
Group and Brainstorm Discussion (Individual) | Heuristic Evaluation (Individual)  
IRB Training (Individual) |
| 2    | Project Scope and Inclusive Design  
Universal Design Resources  
Observational Research Interviews | Quiz 1 (Individual)  
Wireframing (Individual) | Project Roles & Scope (Group) |
| 3    | Concept Sketching | Quiz 2 (Individual)  
Design Gallery Post (Individual) | Generative Research Report (Individual)  
Design Gallery Replies (Individual) |
| 4    | Prototyping | | Research Insights (Group)  
Mid-term Project Reflection (Individual) |
5  Empirical Evaluations
Personas and Walkthroughs

Quiz 3 (Individual)
Design Gallery Post (Individual)
Design Gallery Replies (Individual)

6  History of HCI
Why Don’t More Planes Crash?

Formative Research Report (Individual)
Evaluation Insights (Group)

7  UXR Jobs

Quiz 4 (Individual)
Prototype (Group)
Final Project Reflection (Individual)

8  Presentations

Prototype Presentation (Individual)
Makeup Quiz (optional)

The deadline to choose your own groupmates for the term project (rather than being assigned to a group randomly) is the the drop day for a 100% refund.

Holidays this term (Instructors and TAs will not be working):

- July 4

Extra credit discussion opportunities may be presented throughout the term.

When you've finished reviewing this syllabus, please take the Syllabus Quiz.

**Grading Policies**

**Letter Grade Floors/Ceilings**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percent Floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90</td>
</tr>
<tr>
<td>A-</td>
<td>88</td>
</tr>
<tr>
<td>B+</td>
<td>85</td>
</tr>
<tr>
<td>B</td>
<td>80</td>
</tr>
<tr>
<td>B-</td>
<td>78</td>
</tr>
<tr>
<td>C+</td>
<td>75</td>
</tr>
<tr>
<td>C</td>
<td>70</td>
</tr>
<tr>
<td>C-</td>
<td>68</td>
</tr>
<tr>
<td>D+</td>
<td>65</td>
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<tr>
<td>D</td>
<td>60</td>
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<tr>
<td>D-</td>
<td>58</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
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</tbody>
</table>

**Distribution of Points by Assessment**

<table>
<thead>
<tr>
<th>Category</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Project</td>
<td>20</td>
</tr>
<tr>
<td>Quizzes</td>
<td>20</td>
</tr>
<tr>
<td>Discussions</td>
<td>20</td>
</tr>
<tr>
<td>Individual Assignments</td>
<td>28</td>
</tr>
<tr>
<td>------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Final Presentation</td>
<td>12</td>
</tr>
</tbody>
</table>

In this course, the points are transparent (meaning, an assessment worth, e.g., 3 points is worth 3% of your grade).

**Course Policies**

**Grading Policy**

Your grade for each assessment will be based on the rubric, which will be visible to you as soon as the assignment becomes available. Graders will all follow the same rubric. Submitting assessments (quizzes, reports, assignments, discussion board posts) according to the instructions/rubric in accordance with the syllabus policies and deadlines is the only way to earn points toward your final grade in this course.

I cannot ever give points or change your grade for any of the following reasons:

- Your boss won't reimburse tuition unless you get an A / passing grade.
- You would be eligible for the Dean's List, or some other recognition or scholarship, if you were to get an A in this class.
- Your groupmates / classmates / friends think you are a good student.
- You are on probation and have to get an A in this course.

If you do not participate in a group assignment, your grade for that assignment may be reverted to 0 regardless of the group's score.

If you think there has been a mistake in the grading of one of your assignments (i.e. the grade you were given does not align with the rubric), email your grader to get clarification (you can CC me). If you are not satisfied with the grader's explanation/resolution on an assignment, you may email me (once) to ask for a regrade of that assignment. If you are not satisfied with my regrade decision, you may email the Associate School Head Chris Hundhausen chris.hundhausen@oregonstate.edu.

**Deadline, Revision, and Late Work Policy**

*You must submit all assignments before the due date.* With the exception of the mandatory IRB training assignment and introduction discussion, *we will not accept submissions if the deadline is missed. If you do not submit before the due date, you will receive no credit.*

However, we do have a "revision grace period" policy for the assignments. If you (or your group) are unable to fulfill an assignment or project step to your satisfaction before the due date--for any reason--you may notify the TA (via a Canvas comment along with the original on-time submission) that you plan to submit a revision. You may then submit a revision within 3 days. *Discussion posts/replies, quizzes, and the Final Prototype, Final Reflection, and Final Presentation are not eligible for late revisions.*

If you

1) submit a partial fulfillment of the requirements before the due date,

2) notify the TA when you submit your first attempt, and then

3) resubmit a revised version of your work within three days (ending at midnight 72 hours after the original deadline),
then your grade will reflect your final submission only without incurring penalties. If you do not resubmit within 2 days, your grade will reflect your original (potentially incomplete) submission.

If nothing is submitted by the deadline, Canvas will put an automatic 0 in the gradebook for that assessment. Graders will skip grading assignments that have a 0 put in already. For eligible Assignments, if you submit something (anything) before the deadline, then Canvas won't put that 0 in and your grader will see your submission. They will check for a comment to see if you are planning to use the revision period, and if so then they will hold off on grading your work until the revision period ends. So if you want an extension, submit something before the deadline, or you'll get a 0 that won't change.

Exceptions may be made at the instructor’s discretion for unavoidable emergencies e.g. hospitalization, or extraordinary extenuating circumstances.

You may submit your draft early (most assignments will have templates that you can use to start your draft) with your comment in Canvas to guarantee your 3-day revision extension (even if you don't end up needing it).

Here are some examples of things which are NOT unavoidable emergencies, and which would therefore not qualify a student for an exception to the deadline/revision policy:

- forgetting to turn it in
- assuming it was a group assignment and that groupmates would complete the work and turn it in
- not knowing when the deadline was
- meaning to turn it in without actually turning it in
- birthdays
- working part time / full time / overtime
- being busy
- taking too many classes

**Discussion Participation**

Students are expected to participate in all graded discussions. While there is great flexibility in online courses, this is not a self-paced course. Discussions are not eligible for the revision period.

**Proctored Exams**

There will be no exams in this course. Quizzes are open-note and untimed with unlimited attempts, but are not eligible for the revision period.

**Incompletes**

Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the points possible (in other words, usually everything but the final paper). If you are having any difficulty that might prevent you from completing the coursework, please don’t wait until the end of the term; let me know right away.

**Guidelines for a Productive and Effective Online Classroom**

Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university’s regulations regarding civility. Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.
<table>
<thead>
<tr>
<th>Allowed :)</th>
<th>NOT allowed =&gt;:(</th>
</tr>
</thead>
<tbody>
<tr>
<td>Showing your work with an instructor or TA.</td>
<td>Posting assignment instructions or solutions outside of class.</td>
</tr>
<tr>
<td>Discussing strategies and concepts with classmates.</td>
<td>Submitting someone else's work as your own or claiming their work as yours.</td>
</tr>
<tr>
<td>Submitting incomplete Assignments before the deadline with a note saying you are going to resubmit.</td>
<td>Asking for an extension after missing the deadline for an assignment, unless there was an unavoidable emergency.</td>
</tr>
<tr>
<td>Asking a question by email, in Teams, or on the class message board.</td>
<td>Asking repeatedly for a change in your grade or for an extension or exception to a policy after receiving an answer.</td>
</tr>
<tr>
<td>Disagreeing with someone on the message board.</td>
<td>Name-calling, stalking, or counter-productive comments.</td>
</tr>
<tr>
<td>Discussing the assigned reading or quiz questions in Teams, on Ed Discussion, or in your Canvas discussion group.</td>
<td>Sharing the quiz questions or answers publicly or outside of a class communication medium.</td>
</tr>
</tbody>
</table>

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

**Expectations for Student Conduct**

Student conduct is governed by the university’s policies, as explained in the Student Conduct Code ([https://beav.es/codeofconduct](https://beav.es/codeofconduct)). Students are expected to conduct themselves in the course (e.g., on discussion boards, email, Canvas message, Teams chat) in compliance with the university's regulations regarding civility.

We also expect polite conduct toward the instructor and graders. When you need help, are confused, if there has been a mistake in grading, or if you just don't understand your grade, I want you to contact me so that I can try to help. But we (myself and the graders) are human and deserve to be treated with respect. Harassment of the instructor and/or graders (e.g. sending repeated messages arguing for a grade change or policy exception after being given a clear answer) may be reported to the office for misconduct.

**Academic Integrity, Plagiarism, and use of AI**

- You **MAY** use free [open source] components, such as those provided in Figma's libraries, to help you build your prototype to meet your users' needs. The key here is to use small, individual components that support your design. Standard icons and conventional signifiers for menus are a good example of an appropriate use of public components. Submitting an entire pre-made page, screen or prototype (where your own research had no influence on the artifact and no design input was incorporated into the submission) would be an inappropriate use of resources constituting misconduct.

- You **MAY** use AI-generated content for "placeholder" images and text content in your prototype. Using your research insights to write a prompt so that a language modeling tool can provide text for your prototype screens is allowed. Anywhere where you would otherwise use the famous "lorem ipsum..." placeholder text, you can use AI-generated text instead to create a higher-fidelity prototype that is more
relevant to your project scope. Likewise, if you could otherwise justify the use of stock photos, AI-generated images can be used. Using AI is allowed in this context because you are not being graded on the **content** of your prototype (the subject matter, words or images) but on the **design** and **usability** of it.

- Be careful to check and carefully edit any content created by AI as needed before including it in your submission. Your prototype is considered a "portfolio project", so be sure that you do not mistakenly use anything you would not want an employer to see (or that would run afoul of OSU's conduct standards).
- You may **NOT** use AI to generate report content, citations, research findings, or to fulfill any rubric line item for any assignment. If a requirement is specified in the rubric, it means we expect you personally to demonstrate your competence in fulfilling that task.
- You may **NOT** use AI to falsify research data, or as a stand-in for a living human user for the purposes of user research. Interviewing a chatbot will **NOT** count for your user interview(s), observing AI behavior will **NOT** count as a valid observation, and asking an AI interface to "use", review, or evaluate your prototype will **NOT** be considered valid user testing or formative research.
- You may **NOT** use another artist or designer's work without permission. Check the license and do not infringe on copyright before using words, images, or videos. If you do not have permission and the license information is not available, do not use it.
- You **MUST** include a citation to indicate the source of any material you use, including AI-generated content (otherwise you will be claiming that you authored the work, and that is unfair and possibly a misrepresentation of your own direct skills); you should do this even if the source is an instructor or TA. This means that a citation will save you from most situations that may get you in trouble with plagiarism, but that we will exclude any work by others from grading consideration. If you do not cite the source of your prototype material, it will be assumed to be plagiarized unless it is original to you. You may include your citations in the prototype itself, in the accompanying report, or both.
- We will use plagiarism and AI-detection tools when grading.

In this online program, we require collaboration and building upon the work of others in an honest, respectful way. This means that instead of strictly disallowing working with others (or their work), we encourage a collaboration process. We will primarily be using your assignments, collaboration and projects as a gauge of your success in this course. We expect you to do your own work.

If you are found in violation of any of the above policies, whether you are the giver or the receiver of non-cited help, you may be given a zero on the assignment, failed from the course, or receive higher administrative action. The academic dishonesty charge will be documented and sent to your school’s dean and the Office of Student Conduct.

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**Communication and Where to Go for Help**

**Hann Scott** (instructor): scothann@oregonstate.edu (best way to contact me)

Email is the best way to communicate with me. You may also message me on Teams whenever you have questions without an appointment. I check my Teams messages once a day, and I will be on Teams from 1-2pm on Thursdays if you'd like to chat.

You are not required to participate in communication channels outside of Canvas. I will post any changes to assignments, and make any otherwise necessary announcements on Canvas. We have a Teams workspace and Ed Discussions message board for your convenience, but you do not have to keep up with all activity on Teams/Ed Discussions.

**ULA names | contact info (weekly office hours given in Pacific Time):**

- Jasmine Sidhu | sidhuj@oregonstate.edu
Please note that we do not get notifications for comments made on assignment submissions in Canvas. We only see those if we happen to go look at your submission after the comment has been posted. So if you make a comment after your grader puts the grade in, they are very unlikely to ever see it or know about it. (This is similar to how, if a professor grades your paper and hands it back to you in class, if you then write comments on it in response to their feedback, they won't know about it unless you then give the paper back to them so that they can see the notes that you've written.)

We will strive to have assignments graded within 5 business days after the due date.

We also have Ed Discussions (a Q&A forum for help from the instructor and other students), and Teams (for more informal, synchronous interaction with other students, also used for office hours)

Ecampus Student Resources

University Policies

Academic Calendar

All students are subject to the registration and refund deadlines as stated in the Academic Calendar: https://registrar.oregonstate.edu/osu-academic-calendar

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Statement Regarding Religious Accommodation

Oregon State University is required to provide reasonable accommodations for employee and student sincerely held religious beliefs. It is incumbent on the student making the request to make the faculty member aware of the request as soon as possible prior to the need for the accommodation. See the Religious Accommodation Process for Students.

Accessibility of Course Materials

All materials used in this course are accessible. If you require accommodations please contact Disability Access Services (DAS).

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

Academic Integrity

The Code of Student Conduct prohibits Academic Misconduct and defines it as:

Any action that misrepresents a student or group’s work, knowledge, or achievement, provides a potential or actual inequitable advantage, or compromises the integrity of the educational process.
To support understanding of what can be included in this definition, the Code further classifies and describes examples of Academic Misconduct, including cheating, plagiarism, assisting and others. See the Code of Student Conduct for details.

You are expected to do your own work and demonstrate academic integrity in every aspect of this course. Familiarize yourself with the standards set forth in the OSU Code of Student Conduct Section 4.2. You must only access sources and resources authorized by the instructor. You may not show your work to any other current or future students without the instructor’s authorization. Violations of these expectations or the Code of Student Conduct will be reported to the Office of Student Conduct and Community Standards. If there is any question about whether an act constitutes academic misconduct, it is your responsibility to seek clarification and approval from the instructor prior to acting.

Ecampus Reach Out for Success

University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it’s important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success. Ecampus students are always encouraged to discuss issues that impact your academic success with the Ecampus Success Team. Email ecampus.success@oregonstate.edu to identify strategies and resources that can support you in your educational goals.

For mental health:

Through the Anytime Anywhere program, Ecampus students now have access to free and confidential mental health and wellness counseling at any time of day, from anywhere in the world, 365 days a year.

Students can connect with counselors in real time by calling or using the chat function. Help is available 24/7 in five languages: English, Mandarin, Cantonese, Spanish and French. Additional language support is available by request. The app is ADA compliant and TTY accessible.

Students can request a counselor that matches their same identity by sexual orientation, gender identity, ethnicity, language, and more. These requests are best handled through short-term scheduled appointments rather than in real time. Students can use scheduled short-term therapy for individual or relationship counseling, which are available in 160 languages. The app also includes mental wellness articles, assessments, podcasts, and videos! This service is free to all students taking classes on the Corvallis and Cascades campuses, as well as through Ecampus.

If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255).

For financial hardship:

Any student whose academic performance is impacted due to financial stress or the inability to afford groceries, housing, and other necessities for any reason is urged to contact the Director of Care for support (541-737-8748).

Tutoring and Writing Assistance

NetTutor is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing suite where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.

The Oregon State Online Writing Suite is also available for students enrolled in Ecampus courses.
TurnItIn

Your instructor may ask you to submit one or more of your writings to Turnitin, a plagiarism prevention service. Your assignment content will be checked for potential plagiarism against Internet sources, academic journal articles, and the papers of other OSU students, for common or borrowed content. Turnitin generates a report that highlights any potentially unoriginal text in your paper. The report may be submitted directly to your instructor or your instructor may elect to have you submit initial drafts through Turnitin, and you will receive the report allowing you the opportunity to make adjustments and ensure that all source material has been properly cited. Papers you submit through Turnitin for this or any class will be added to the OSU Turnitin database and may be checked against other OSU paper submissions. You will retain all rights to your written work. For further information, visit Academic Integrity for Students: Turnitin – What is it?

Establishing a Positive Community:

It is important you feel safe and welcome in this course. If somebody is making discriminatory comments against you, sexually harassing you, or excluding you in other ways, contact the instructor, your academic advisor, and/or report what happened at https://studentlife.oregonstate.edu/studentconduct/reporting so we can connect you with resources.

Student Evaluation of Courses

The online Student Evaluation of Teaching system opens to students during the week before finals and closes the Monday following the end of finals. Students receive notifications, instructions, and the link through their ONID. They may also log into the system via Online Services. Course evaluation results are extremely important and used to help improve courses and the online learning experience for future students. Responses are anonymous (unless a student chooses to “sign” their comments, agreeing to relinquish anonymity) and unavailable to instructors until after grades have been posted. The results of scaled questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.

Student Bill of Rights

OSU has twelve established student rights. They include due process in all university disciplinary processes, an equal opportunity to learn, and grading in accordance with the course syllabus: https://asosu.oregonstate.edu/advocacy/rights.