

Course Syllabus

 Edit

IS 485: Design for Accessibility

Course modality: In-person (KUPF 204): Tuesdays and Thursdays | 1:00 PM - 2:20PM

Prerequisite: None

Instructor	Email	Office hours
<u>Alisha Pradhan</u>  <u>(https://www.alishapradhan.net/home)</u>	alisha.pradhan@njit.edu	Thursdays: 11.30 am-12.30 pm Or reach out to set up meeting via Zoom

Teaching Assistant	Email	Office Hours
Esther Mba	eim@njit.edu	Tuesdays: 11.30 pm - 12.30 pm Office: GITC PhD Suite, 3rd Floor Or reach out to set up meeting via Zoom

Course description:

One in five people around the world have a disability. This class will focus on how to think about disability in the context of design and socio-technical systems by introducing you to accessibility.

This course is an introduction to designing, prototyping, and evaluating inclusive user interfaces that meet the needs of a diverse range of users—such as users with visual, cognitive or motor impairments, users who are Deaf/deaf** or hard of hearing, and older adults. Building on basic concepts in human-centered design, you will learn about design exclusion and barriers to use, and methods by which these can be overcome. Topics will cover current technologies and practical considerations (e.g., web accessibility requirements), as well as research developments and design of the next generation of accessible technologies. You will interact with the material through readings, discussion, individual and group assignments, and an online Web accessibility certification course.

Learning Outcomes:

After successfully completing this course you will be able to:

- describe how factors such as age, impairment and context broadly impact user interface design requirements.
- identify technologies that can assist users with disabilities and understand what accessibility problems they address.
- characterize and compare common design paradigms and philosophies related to inclusive user interface design.
- implement accessibility guidelines at a basic level of competence.
- apply user research and design methods to create new technology prototypes that improve web accessibility.

Required Resources

- Course Canvas Page
- Readings will consist primarily of research papers and book excerpts and will be provided by the instructor or online through the Libraries.

- You will also need to register for the W3C Introduction to Web Accessibility Certification course:
<https://www.w3.org/WAI/fundamentals/foundations-course/> (https://www.w3.org/WAI/fundamentals/foundations-course/)

Grading

This course has NO EXAMS

Participation + attendance	10%
DREEMing exercise	15%
Reading reflections	10%
W3C accessibility certification course	20%
Homework assignments	15%
Team project	25%
End of semester reflection	5%

DREEMing Exercises (10%)

Approximately every other week, we will learn about different disability communities. There will be an accompanying DREEM assignment that requires students to find media (often social media posts) created by individuals in that specific community and reflect on what they

learn from these shared experiences. We will then have in-class discussions on these reflections.

Reading reflections (10%)

Research papers, book chapters, news articles, podcasts, and/or videos will be assigned to read, listen to, or watch at home. You will be asked to 1) summarize the content you read that week, 2) describe one thing that was confusing to read, and 3) brainstorm one discussion question for your classmates.

W3C Accessibility Certificate Modules (20%)

For the first 5 weeks of the class, you will be completing 1 module within [the W3C Introduction to Web Accessibility Certification course](https://www.w3.org/WAI/fundamentals/foundations-course/)  (<https://www.w3.org/WAI/fundamentals/foundations-course/>). Within each module there is at least 1 quiz to test your understanding of the content. After taking the quiz you are required to submit a screenshot of your completed modules as well as your quiz grade to that week's corresponding Canvas assignment. This is to verify you are making progress in the online course and so that we can record your quiz grades in Canvas. The weighted grade you finish the certification course with will count as 20% of your final grade in this class.

Homework assignments (three over the semester, 15%)

Homework assignments will be assigned periodically throughout the semester and may include: finding examples of inaccessible technologies, writing an essay, or doing an analysis of accessibility online.

Final project (25%)

Choose **ONE** of the following options below:

- 1. Design and Prototype** | work in groups of 2-3: Follow a participatory design approach to design, prototype, and evaluate a new technology for a specific population. The evaluation for this type of project can be more exploratory, rather than a full-scale evaluation, but you must still work with target populations to understand their needs and reactions to the prototype.
- 2. Research** | solo/group: Choose an active area of research in the accessibility, aging, and HCI research community. Conduct a literature review summarizing existing work and identify gaps for future research that are not already addressed in the papers. Briefly describe a research study plan that would address at least one of these gaps.
- 3. Accessibility evaluation/audit** | work in groups of 2 (at max): to evaluate a user interface, and identify implications/suggestions to redesign the user-interface to address accessibility violations for a specific disability community. You can also do a usability evaluation of an existing assistive technology with the specific population. This may include assessing the usability and usefulness of a specific product through a field study.

Letter to Number Grade Conversions

A 90% and above

B+ 85-89%

B 80-84%

C+ 75-79%

C 70-74%

D 60-69%

F 59% and below

Course Schedule

Week	Topic
1	Syllabus+ Introductions Talking about accessibility, ability assumptions Universal design, inclusive design, assistive technology Disability models and writing about accessibility
2	Disability-Related Empathy, disability simulation Introduction to participatory and co-design
3	Designing with people with visual impairments
4	Designing with people with visual impairments (ctnd) Designing with people with mobility + motor impairments
5	Designing with people with mobility + motor impairment
6	Designing with people who are Deaf** or hard of hearing
7	Designing with people with cognitive impairments + neurodiverse individuals

Week	Topic
8	Class cancelled for ACM CSCW and ASSETS Required: Scope project proposal (individually or in groups) Optional: Read 1 2025 ASSETS paper related to your final project
9	Designing with older adults
10	Designing with people living in resource-limited societies
11	Mental health
12	AI and disability
13	Project check-ins
14	Final presentations
15	Final report due

***In the word "Deaf" (capitalized), the "D" indicates a cultural identity, referring to individuals who are part of the Deaf community and share a common language (typically American Sign Language) and culture. When "deaf" is lowercase, it typically refers to the audiological condition of hearing loss, without necessarily implying cultural affiliation*

Policy for Late Work

- Reading assignments will not be accepted late

- DREEMing exercise can be submitted one day late at a 1-point penalty
- Late submissions on homework assignments are subject to a 20% penalty per day

For the final project packet, **no late submissions will be accepted.**

Generative AI use:

The usage of artificial intelligence (AI) is permitted in this course for creating images (e.g., to use in personas or journey maps), or to edit and improve the quality of your existing text and report. For any other use of generative AI in assignments, you must consult the instructor to seek prior approval. Otherwise you risk loosing full points for the submission.

Academic Integrity

“Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the [NJIT academic code of integrity policy](#)  [\(http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf\)](http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf).

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu [\(mailto:dos@njit.edu\)](mailto:dos@njit.edu).”

Requesting Accommodations:

The Office of Accessibility Resources and Services works in partnership with administrators, faculty, and staff to provide reasonable accommodations and support services for students with disabilities who have provided their office with medical documentation to receive services.

If you are in need of accommodations due to a disability, please contact the [Office of Accessibility Resources and Services](https://www.njit.edu/accessibility/)  (<https://www.njit.edu/accessibility/>) to discuss your specific needs.

Student Absences for Religious Observance:

NJIT is committed to supporting students observing religious holidays. Students must notify their instructors in writing of any conflicts between course requirements and religious observances, ideally by the end of the second week of classes and no later than two weeks before the anticipated absence. For questions or additional guidance, please [review the policy](https://t.e2ma.net/click/rh9gwmb/7pens6ml/7d5nt2x)  (<https://t.e2ma.net/click/rh9gwmb/7pens6ml/7d5nt2x>) or contact the Office of Inclusive Excellence at inclusiveexcellence@njit.edu.