

Research and Design of Accessible Computing Technologies CS 4980:0005

Semester: Spring 2017

Time and Location: Tuesday and Thursday: 2-3:30pm in 113 MacLean Hall

Course Website: <http://homepage.cs.uiowa.edu/~krector/sp17.php>

The University of Iowa
College of Liberal Arts and Sciences
Department of Computer Science

The College of Liberal Arts and Sciences (120 Schaeffer Hall) is the administrative home for this course, so it governs some of the policies relating to this course (such as the drop deadline).

Instructor: Kyle Rector

Office hours and location: Tuesday and Thursday: 3:30-4:30pm, Wednesday: 1-2pm in 101K MacLean Hall and by appointment

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DEO: Alberto Maria Segre, 14G MLH

Course Description:

For people with disabilities, the technology we develop may introduce barriers that prohibit access to information. For example, the original touchscreen phones presented most of the information visually, which is inaccessible to people who are blind. In this course, we will read and discuss both seminal and cutting edge research in developing accessible technology. We will cover different types of disabilities, including sensory, motor, and cognitive impairments.

This course is an introduction to the field of accessible technology. This is a graduate level course, so this course involves a comprehensive amount of reading, writing, critical thinking, and discussion. Students will apply their learning in an individual/group project to the design, implementation, and/or evaluation of accessible technologies.

Course Goals and Objectives:

I want students to leave this course with an appreciation for accessibility, knowledge of the different types of disabilities, the technologies that they currently use, a breadth of the types of research in the field, and experience conducting their own research. The [Assistive Technology Course](#) at UMBC by Dr. Amy Hurst is an inspiration for this course, and so there may be materials from the Assistive Technology course with my own modifications.

Students will gain experience in the following areas:

1. Assistive Technology
 - a. Identify a range of assistive technologies and understand what accessibility problems they address
 - b. Understand of a wide range of user needs
 - c. Develop and evaluate assistive technologies
2. Research
 - a. Design, prototype, and/or evaluate an assistive technology
 - b. Conduct an independent research project that is relevant to the accessibility field
 - c. Schedule and meet deliverables in a research project
 - d. Understand requirements to conduct human subject research, if applicable
3. Communication
 - a. Synthesize and critique a research paper
 - b. Create and give an oral presentation synthesizing research problems, challenges, and results
 - c. Communicate a research project during class presentations

Texts:

I will post required reading assignments on the course website:

<http://homepage.cs.uiowa.edu/~krector/sp17.php>

Expectations:

The University suggests that for each semester hour credit in a course, students should expect to spend two hours per week preparing for class sessions. I expect students to attend all lectures and prepare before attending class by completing assignments. I encourage students to be active during class, ask questions, and share relevant experiences.

Grading System and the Use of +/-:

Final grades will be determined on a fixed scale. There will be no curve. Students will not compete against each other. The final grade will reflect each student's efforts and mastering of the course content. **This course uses +/- grading.** The only way to receive an A+ grade is for exceptional performance that goes beyond course requirements.

Assignments and Percentage of Final Grade:

Final Grade Distribution

Reading Reflections (30%)

Group/Individual Design/Research Project (50%)

Class Participation (20%)

Reading Reflections (30%):

Complete the readings throughout the semester. The purpose of these readings is to give you a background in accessibility, synthesize accessibility research, and prepare you to conduct accessibility research. In addition, I will ask discussion questions or ask you to reflect on your thoughts about the readings. Each reflection should be 400-600 words of thoughtful dialogue in addition to 3-5 discussion questions that you will write for the upcoming class. Submit the reflections through ICON's discussion feature. You will receive a complete or incomplete grade for each assignment. During the semester, you have two free incompletes that will not affect your grade. If your research project will involve IRB/CITI Program Training and IRB application, you will have two free incompletes and the work for the IRB will replace two other reading assignments.

Group/Individual Design/Research Project (50%):

The project is an opportunity to employ your learning in practice. Each project group can be 1-3 people. The project must focus on one or more populations of people with disabilities (e.g. blind or low vision, deaf or hard of hearing, cognitive impairments, physical impairments, etc.). You have the opportunity to propose the project topic, and the projects can be a new design and/or research study with quantitative and/or qualitative data. The groups will complete each project component together. Submit the components through ICON. I will use a rubric to grade the project assignments based on the given requirements.

Project Deliverables

P1: Project Proposal

P2: Mid-Quarter Presentation

P3: Final Presentation

P4: Final Deliverable

Class Participation (20%):

Participating in the class discussions will help you develop skills in research, critical thinking, and networking. Discussions should be constructive and based on the readings. It is okay to use technology if it supports the discussion. Ask challenging questions and build off one another's responses. If you find something relevant to the course, feel free to post to the ICON discussion board. In addition, feel free to visit my office hours to chat or talk about the assignments and project. I do not grade specifically on attendance, but it will affect the amount of participation you receive for the course.

Timely completion of assignments:

There is no late credit for Reading Reflections because we will use them for in-class discussions.

For the group projects, I will deduct points because it is important to make timely progress on your projects. I will penalize late assignments unless you can document exceptional circumstances. I will deduct points as follows: 20% for the first 24 hours, 50% between 24 and 48 hours, and 100% if more than 48 hours late.

A Note on Collaboration:

Your final research project is collaborative. Students should complete a similar amount of work so that everyone contributes equally to the final project.

However, in the event of continuing evidence of a team member not fully contributing to the team effort, being a disruptive influence on group dynamics, or otherwise negatively affecting team efforts, I reserve the right to lower that team member's grade on group assignments.

Students who misrepresent themselves as equal partners in this collaborative project but who are actually letting others do the bulk of the work, I will reported to the College for academic dishonesty. If you have questions, it is your responsibility to ask them.

A Word about the Date and Time of the Final Exam:

There is no final exam for this course.

Resources for Students:

Students will find the Writing Center and the Speaking Center very useful for this course; the Tutor Iowa site is also very valuable for students seeking extra help:

Writing Center: <https://writingcenter.uiowa.edu/>

Speaking Center: <https://speakingcenter.uiowa.edu/>

Tutor Iowa: <https://tutor.uiowa.edu/>

Calendar of Course Assignments:

The timeline of topics and course assignments are located on the class website:

<http://homepage.cs.uiowa.edu/~krector/sp17.php>

The College of Liberal Arts and Sciences: Important Policies and Procedures Administrative Home

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS [Academic Policies Handbook](#).

Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondence ([Operations Manual, III.15.2](#). Scroll down to k.11).

Accommodations for Disabilities

A student seeking academic accommodations should first register with Student Disability Services and then meet with the course instructor privately in the instructor's office to make particular arrangements. See <https://sds.studentlife.uiowa.edu/> for more information.

Academic Honesty

All students taking CLAS courses have, in essence, agreed to the College's [Code of Academic Honesty](#): "I pledge to do my own academic work and to excel to the best of my abilities, upholding the [IOWA Challenge](#). I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled (CLAS [Academic Policies Handbook](#)).

CLAS Final Examination Policies

The date and time of every final examination is announced by the Registrar generally by the fifth week of classes. No exams of any kind are allowed during the last week of classes. All students should plan on being at the UI through the final examination period. It is the student's responsibility to know the date, time, and place of the final exam.

Making a Suggestion or a Complaint

Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and then with the departmental DEO. Complaints must be made within six months of the incident (CLAS [Academic Policies Handbook](#)).

Understanding Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the [Office of the](#)

[Sexual Misconduct Response Coordinator](#) for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the [Public Safety website](#).