

# Introduction to Assistive Technology and Accessibility

## HCC 741 Fall 2014, 3 Credits

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Office Hours: Thursdays 3:30-4:30pm, and by appointment.

### REQUIRED MATERIALS

1. UMBC e-mail ID (Please do not use any other e-mail ID for class correspondence)
2. UMBC Blackboard ID
3. Wordpress Account (<http://umbcassistivetech.wordpress.com/>)

### COURSE DESCRIPTION

This is a graduate level course that will serve as an introduction to the field of assistive technology. Assistive Technologies empower many individuals to achieve things that they might not have been able to otherwise. This class will serve as an introduction to the design, development and evaluation of a range of assistive technologies.

Students will interact with the material through reading relevant literature, participating in group discussions, creating relevant presentations, working on an individual project, and listening to guest speakers. Students will apply their knowledge in a research project where they will design, implement, and/or evaluate an assistive technology.

### PREREQUISITES

This course is open to all graduate students interested in Assistive Technology and Accessibility research, but will focus on Human-Centered Computing Methods. There are no prerequisites.

### COURSE OUTCOMES

When this course is completed, the student 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 in collaboration with researchers or AT professionals.
    - 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
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 in a large format poster during a poster session

## ATTENDANCE AND PARTICIPATION

Regular and punctual attendance is expected of all students. In the case of significant events warranting excused absences, it is the student's responsibility to confer with the instructor about the absence and missed course work.

## HOMEWORK / CLASS PREPARATION

There will be a reading assignment for every class period. All of the reading assignments should be completed before the class in which the material is to be discussed.

### Pre-Class Preparation

**Readings** There will be reading assignments every week from the textbook and/or academic research papers. Students are expected to come to class having read the assigned readings

**Reading Reflections** In order to help students engage with the reading material, they will be required to summarize their thoughts on their own blog.

### In-Class Presentations

**Reading Presentations** Most class sessions will have student presentations of the readings. All students are required to give presentations, one summarizing and discussing the assigned readings and a second that describes relevant news in accessibility or assistive technology or someone who has been active in the field.

Student presentations should not include video unless the instructor has given permission. Students will be graded for this activity on their level of understanding the reading, summarizing it clearly to the class, and finding and explaining relevant materials.

## GRADING

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 class will use +/- grading.**

Course performance will be evaluated with the following standards:

- Class preparation and participation is expected.
- All deliverables are to be submitted on time.
  - **Late projects** will not be accepted, except under the most extreme circumstances.

Individual project			60%
	Project proposal report	5%	
	Weekly blog status updates	10%	
	Poster presentations (2)	20%	
	Interim report	10%	
	Final report	15%	
2 In-class presentations			15%
	Reading summary	10%	
	News / Hero	5%	
Service learning assignment			10%
Weekly online blog summaries			10%
In-class participation			5%

For students who are interested, there may be a few opportunities for to earn **extra credit** in this course. These additional assignments and activities will be designed to be fun, and give students a different perspective on the material outside of what we do in class. Details about these extra credit opportunities will be announced in class and on blackboard.

## Project Details

As part of the project, you will write a proposal for your project that will describe technique, tool, or method you will develop or study and a plan for how you will get this done during the semester. Additionally, there will be two posters sessions at which interim reports will be due, and final presentations. At that time, 8 page long final papers will be due, in ASSETS format.

If you are going to interact with humans subjects for any part of your project you will need to get IRB approval, and all students will need to complete human subjects training. The instructor will write an IRB application that will cover most of the student projects, but students who are interested in publishing their work, or want to work with minors will have to submit a separate IRB application.

### Proposal Details

Project proposals should clearly lay out what you plan to do. Proposals should be 2-3 pages long in the ACM format. Your proposal should include references to literature that supports your basic ideas/approach. Your proposal should include an introduction providing an overview of the problem you are trying to solve (and relevant related work), a section discussing what you will do, and who your intended audience is, a section discussing how you will show that you achieved your goals, conclusions, and any references. Finally, it should also include a clear statement of the milestones for your project and a preliminary plan for how you will achieve these milestones.

## ACADEMIC INTEGRITY

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty and integrity.

Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty and they are wrong. Academic misconduct will result in disciplinary action that may include failure of the course, suspension or dismissal. Acts of Academic Misconduct are defined as the following:

**Cheating:** Knowingly using or attempting to use unauthorized material, information, or study aids in any academic exercise.

**Fabrication:** Intentional and unauthorized falsification or invention of any information or citation in an academic exercise.

**Facilitating Academic Dishonesty:** Intentionally or knowingly helping or attempting to help another commit an act of academic dishonesty.

**Plagiarism:** Knowingly representing the words or ideas of another as one's own in any academic exercise, including works or art and computer-generated information/images. To read the full policy on academic integrity, consult the UMBC web site <http://www.umbc.edu/provost/integrity/index.html>.

## In-Class Expectations

Attendance, punctuality and attention to presentations are expected.

It is expected that students will exhibit the appropriate behavior of interacting with personal technology (and not use them for off-topic activities), as a significant portion of the course will be many discussions and several guest speakers.

## USEFUL INFORMATION

Add/Drop day this semester is **September 12th**.

**Most likely times during the day to get an e-mail response:** I check my e-mail frequently, but am most likely to check e-mail for this class in the mornings (8am - 10am) and late afternoon (3pm-6pm). If you have an urgent need I have not yet responded to, re-send your email with “second try” in the subject line.

Since this is a project course, and there are several weeks between project deliverables, I strongly recommend students meet regularly with their project mentors. **I am always happy to meet with you to discuss your project** and help you in any way possible. You may come to my office hours for this, but it is probably best for you to schedule a 1-1 meeting with me to discuss details about your project.

There are many conferences and venues to present assistive technology research. This course has been designed so exceptional research projects can be submitted to relevant HCI and accessibility conferences.

<b>Tentative Schedule:</b> subject to change based on speaker availability			
<b>Week</b>	<b>Date</b>	<b>Topics</b>	<b>Project Deliverable Due</b>
1	8/28	Syllabus, AT and Accessibility Introduction	Submit Skills / Interests survey
2	9/4	Universal Design, Working with Special Populations, Research methods, IRB,	Setup Class Blog
3	9/11	Accessibility Legislation <b>Project Topics</b>	Complete IRB Certification
4	9/18	Computer Access and Assessment <i>GS: Kelly Meadows</i>	
5	9/25	<i>Field Trip: Maryland Technology Assistance Program (MDTAP)</i>	Project proposal
6	10/2	Cognitive impairments, and Intellectual Disabilities <i>GS: SUCCESS (start at 4:30)</i>	
7	10/9	Educational Assessments <i>GS: Patti O'Malley &amp; Erin Buehler</i>	
8	10/16	Disability Studies / Models of Disability	Service learning
9	10/23	Adaptive Sports	
10	10/30	Motor impairments and mobility	Submit posters Proof Interim report
11	11/6	Vision Impairments	Poster session 1 Interim report due
12	11/13	Web Accessibility	
13	11/20	Older Adults <i>GS: Judah Ronch (start at 4:30)</i>	
14	11/27	Thanksgiving NO CLASS!	
15	12/4	Injury and Robots / DIY and Accessibility	Submit posters
16	12/11	Final Poster Session	Poster session 2 Proof report
	12/15		Final paper due

\*GS = Guest Speaker