

SI388 Syllabus— Fall 2018

Putting the H in HCI: Human perception, cognition, and mental processes

Most recent update: 29th Aug 2018

Please note that by continuing in this class you agree to all terms in this syllabus document.

Instructor: Mark Thompson-Kolar (mdmtk@umich.edu)

Class times: 10 am-Noon Wed, Sept. 5-Mon, Dec. 10, 2018 (Course #25118)

Class location: 1255 NQ

Office Hours: By Appointment (send me email to request)

Overrides

My goal is to allow everyone who asks to enroll in the course, up to our capacity limit in the lecture hall. Email me if you would like an override.

Course Description

Putting the H in HCI: Human Perception, Cognition and Mental Processes—Designing effective interactive systems requires understanding the capabilities and limitations of users. In this course, we'll examine human perception, cognition, behavior related to the design of interactive systems. We'll survey research from the social and biological sciences, with attention to how these concepts influence UX design and research.

Course Overview

In order to successfully design, deploy, and evaluate interactive systems for people, knowledge of the characteristics, strengths, and constraints of human cognition, perception, and motivation is required. The purpose of this course is to allow students on the UX path of the BSI degree – and interested others – to gain a *functional* and *actionable* knowledge of relevant core concepts in Human Computer Interaction, in service of the design and research of interactive systems.

Learning Objectives

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

- Identify key constraints and characteristics of human perception, cognition, and behavior.
- Describe the impact of these constraints and characteristics on the design of interactive systems.
- Critique and be able to design interactive systems on the basis of knowledge of human capabilities and behaviors.

Readings

The course will present a mix of conceptual and practical readings. The former will typically present summary knowledge about human characteristics drawn from cognitive psychology or HCI. The latter will typically be drawn from the UX field.

Two required textbooks

- **Ritter, F.E. 2014.** *Foundations for Designing User-Centered Systems: What System Designers Need to Know about People*: 2014 ed. University Park, PA: Springer. ISBN-10: 144715133X / ISBN-13: 978-1447151333

- **Johnson, J. 2014.** *Designing with the Mind in Mind, Second Edition: Simple Guide to Understanding User Interface Design Guidelines*. Waltham, MA: Morgan Kaufmann. ISBN-10: 0124079148 / ISBN-13: 978-0124079144

Ritter's book is available for download as PDF through the University of Michigan Library. Johnson's book is available as an online book through the University of Michigan Library. Both titles in printed format also can be bought online relatively inexpensively.

This book is optional but strongly recommended:

Norman, D. 2013. *The Design of Everyday Things: Revised and Expanded Edition*. Basic Books. ISBN-10: 0465050654 / ISBN-13: 978-0465050659

Other required and recommended (e.g. optional) readings are provided in the Files area on Canvas.

Course Structure

The course is a hybrid lecture format, typically with some amount of lecture each session, along with in-class exercises or presentations by students.

Assignments

Course points are out of a total of 500, allocated as described:

In-class group assignments (5 for a total of up to 50 points; which is 10% of course total): In groups of 5-6, you will complete an assignment activity usually *during* class time that allows you to apply the knowledge relevant to that week's topic. The "deliverable" typically will be a hand-drawn + hand-written submission given to the instructor, with each contributor's name clearly provided on a title page. *No points can be applied retroactively to in-class submissions, so make absolutely certain your name is on your group's submission title page; don't even ask me to add you retroactively.*

"Teach a Chapter" Presentation (up to 75 points, for 15% of course total): In groups of 4 students, you will present content from a chapter of an HCI, UX, UCD, or Usability book. The specific prompt and list of suggested books is in the **Assignments section on the course Canvas site**. *If you work in the UX field, you will do a lot of explaining concepts to people, and this will give you practice for doing so.*

Mid-term Exam (up to 175 points, for 35% of course total): A midterm exam will be held in-class on Wednesday, 17th October. It will focus on testing knowledge and comprehension of course concepts in approximately the first half of the class. Exams are to be completed individually, without collaborating with anyone else. The exam is closed book/no electronics -- you are allowed one **3x5 notecard** (not larger).

Final presentation (up to 200 points, for 40% of course total): As a final assignment, you will—as an *individual* or as part of a *four-student group*—write a detailed analytical presentation deck and present the findings to the class. The detailed prompt is in the **Assignments tool on Canvas**. Generally, the prompt asks you/your group to concisely demonstrate your ability to apply concepts covered in class in service of analyzing and critiquing *a portion of* a specific interactive information system, such as a website, mobile app, etc. **The topic/information system should be approved by the instructor before you begin work on the project; projects that are not approved will lose 10% of the available points.**

Grading Scale

1. Letter grades will be assigned at the end of the class as follows:

- Students scoring 95–100+% of course points will receive A's
- Students scoring 90–94% of course points will receive A-'s

- Students scoring 87–89% of course points will receive B+'s
- Students scoring 83–86% of course points will receive B's
- Students scoring 80–82% of course points will receive B-'s
- Students scoring 77–79% of course points will receive C+'s
- Students scoring 73–76% of course points will receive C's
- Students scoring 70–72% of course points will receive C-'s
- Students scoring 67–69% of course points will receive D+'s
- Students scoring 63–66% of course points will receive D's
- Students scoring 60–62% of course points will receive D-'s
- Students scoring 0–59% of course points will receive E's

2. Percentages will be rounded to the nearest integer from the second decimal place. So, for example, if you had 81.499%, I would drop the final two decimal numbers, leaving 81.49%, and then round to the nearest integer, 81%.

3. I reserve the right to modify either this scale or individual grades at my sole discretion, to fit my judgment of individual students' knowledge, abilities, and professionalism or to describe more accurately the overall distribution of scores.

4. Professionalism counts in the classroom the same way it does in a workplace. Professionalism entails coming to class on time, leaving personal business at home, contributing thoughtfully and appropriately to classroom discussions, and treating others with respect. ***In particular, students must avoid talking while others are presenting.*** I'm analogous to a job supervisor; think of your fellow students as coworkers. A lack of professionalism – particularly as regards disrespecting your classmates – can lower your final grade.

5. It is your responsibility to be aware of your scores and academic standing. Scores will be posted to Canvas as soon as is practicable.

Group Work

Group submissions must have names of all contributors clearly legible on the first page of any papers, slide decks, or other deliverables when turned in. To avoid unfairness, names **cannot** be added after submission.

Penalties for Late Assignments

Due dates are the **last opportunity** to submit assignments for full points; the best practice is to turn them in early. A firm 5% of points for the larger assignments will be deducted for each day late. Late assignments should be submitted to me via email ASAP so as not to incur further penalty. (Note: the reduction is a firm 1 point per day late (e.g. 10% per day) for the in-class group assignments.)

Anticipated Official Absences

If you anticipate you will miss class for a university-sponsored function such as a conference, a sports event you are participating in, or a job interview/fair, email me in advance with the date(s). *You can make up in-class assignments occurring on these absence days without penalty if I know ahead of time.* The assignment will be due before the next class meeting after the absence. However, the standard point deduction will apply if you don't notify me in advance (this is consistent with the professional world, as employers expect to be notified in advance of absences).

If your time out of class coincides with the due date of a larger assignment (final presentation, midterm exam, teach-a-chapter date), we likely can negotiate a different time for you to submit it. Note: general campus events, speakers, rallies, etc. are not appropriate to qualify for "official absence."

If you do miss a class session...

Life is full of conflicting demands, and it may well happen that at some point you will inadvertently miss class. Here are some things to keep in mind if you do.

- You should get lecture notes from other students. I am glad to answer specific questions about content you missed, but I won't use office hours to re-present the class material, or answer general questions like, "Did I miss anything?" I am glad to clarify particular points, to direct you toward assignment prompts, and so forth, once you know what you need.
- If you miss in-class work, you can submit it via email, with the standard reduction. This means it is in your best interest to find out quickly what you missed, complete the assignment, and submit it to me via email.

Final Day of Class / Assignments

The final class meeting is Monday, Dec. 10. All assignments must be turned in before 11:59 p.m. on Dec. 10 to receive any points on them.

Writing Requirements for Papers/Presentation Decks

- **Editorial Style.** This class does not require a specific editorial style. However, the American Psychological Association (APA) works very well as a basic style. The Purdue OWL site has a useful overview. <https://owl.english.purdue.edu/owl/resource/560/01/>. Bottom line is that I should be able to track down a reference easily; I'm resourceful, but don't make me struggle to find your reference.
- **Font.** All major assignments (those created outside of class) must be typed, using a font appropriate for professional communication. For papers, 12-point Times New Roman is a good choice, but other easily readable fonts are acceptable. For presentation decks, 18-24 points is the best practice minimum size.
 - **Any handwritten** (e.g. in-class) assignments need to be clearly legible and reasonably neat.
- **Layout.**
 - All pages or slides must have a page number.
 - The first page of all work should have a title and the names of all contributors.
 - Hardcopy papers should be stapled in the upper-left-hand corner (for in-class assignments, use paper clips or fold the corners together tightly).
- **Prose.** You are at a highly competitive university. It is expected that your written communication will be effective. Misspellings, grammatical errors, inconsistencies, general sloppiness, or other problems will count against the assignment's score.
- **Electronic format.**
 - Any papers submitted electronically must be in Google Docs or PDF format.
 - Any presentations must be in Google Slides, PowerPoint, or PDF.
- **Filenames.** For electronic submissions, filenames should be your first initial, last name, an underscore (_), and a short name of the assignment (e.g. **BSmith_Chapter_100Things_Pres.pdf**). For groups, the group name should be in the filename (e.g. **Group19_FinalPres_MealsOnWheels.pdf**).

Course Policies

Communication with Instructor

Email is the most effective way to contact me. **Be sure to include "SI388" in email subject lines.**

I respond at business-world speed or faster, so you can expect a response typically by the end of the next business day. Questions that require discussion more lengthy than a short (5 minutes or less) response may be better addressed in person at office hours (by appointment).

Lecture Presentation Decks

Education research has shown that learning is enhanced when students take their own notes during the lecture (we'll cover the concept of "elaborative processing" in our Learning lectures). My slides display page numbers so you can indicate in your notes what slide they relate to. I will post the slide decks on Canvas usually a few hours after class is over.

Grade Appeals

If you believe that a score does not reflect accurately the quality of your work, you may submit a grade appeal **within five business days after that grade is posted**, by contacting me.

I welcome your grade appeal. We all make errors, and it is possible that your work should be reviewed.

The process for a grade appeal is this:

- Send me an email containing a description (typically a paragraph or two) explaining *clearly and specifically* why you believe the submission should have a higher grade than the one originally given.
- Optionally, you also can schedule an office hours visit with me to discuss the appeal.

The appeals process is a *complete regrade of the whole assignment*. Sometimes an appeal leads to a grade revision—*this may be higher or lower*. **By entering into the appeals process, you agree to accept any revision, either up or down.** Note, for group projects, any member or members may request an appeal – in such situations, only the person(s) making the request will be affected by a grade revision (up OR down).

Academic Integrity

Original Work. Unless otherwise specified in an assignment all submitted work must be your own, original work. Any excerpts, statements, or phrases from the work of others must be clearly identified as a quotation, and a citation provided. Any violation of the School's policy on Academic and Professional Integrity (see <http://tinyurl.com/zekxnma>) will result in serious penalties, which might range from failing an assignment, to failing a course, to being expelled from the program. Violations of academic and professional integrity will be reported to UMSI Student Affairs because I'm required to do so. Consequences impacting assignment or course grades are determined by the instructor (me); additional sanctions may be imposed by the Assistant Dean for Academic and Student Affairs.

Plagiarism. You may incorporate selected excerpts from publications by other authors, but they must be clearly marked as quotations and attributed. Even paraphrasing of someone else's ideas requires appropriate attribution and citation. You may obtain copyediting assistance and you are encouraged to discuss your ideas with others—but all substantive writing and ideas must be your own or to cite another source. See the UMSI student handbook (see <http://tinyurl.com/zekxnma>) for the definition of plagiarism, resources to help you avoid it, and the consequences for intentional or unintentional plagiarism. **The bottom line is just that you should expect to provide citations referencing any information you used that you didn't create (such as books, journal articles, blog posts, or lecture slides).**

Accommodations for Students with Disabilities

If you think you need an accommodation for a disability, please let me know at your earliest convenience. Some aspects of this course, the assignments, the in-class activities, or the topics I teach may be modified to facilitate your participation and progress. As soon as you make me aware of your needs, we can work with the Office of Services for Students with Disabilities (SSD) to help us determine appropriate accommodations. SSD (734-763-3000; <http://ssd.umich.edu/>) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. Any information you provide is private and confidential and I will treat it as such.

Student Mental Health and Wellbeing

The University of Michigan is committed to advancing the mental health and wellbeing of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and <https://caps.umich.edu/> during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. You may also consult University Health Service (UHS) at (734) 764-8320 and <https://www.uhs.umich.edu/mentalhealthsvcs>, or for alcohol or drug concerns, see www.uhs.umich.edu/aodresources. For a listing of other mental health resources available on and off campus, visit: <http://umich.edu/~mhealth/>.