

KMD 1002H – Applications in Knowledge Media

Section: 0102

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Class time: 1pm – 4pm, Tuesdays

Class location: OA 120, Room 120, Old Administrative Building, 263 McCaul St.

COURSE DESCRIPTION AND OBJECTIVES

This course explores fundamental concepts in design through a combined seminar and exercise format. Specifically, we will explore the fundamentals of interaction design and the design process, going from a defined problem to an early-stage prototype. Students will read relevant literature on various facets of the design process and will engage in hands-on exercises to build practical knowledge.

Students will work individually and in groups to build skills in areas like sketching, ideation, and qualitative user testing. Students will be asked to consider various issues at play in interaction design and are expected to explore and improve their domain expertise. Students will go through a structured process of iteration in order to build their capacity for ideation and development of various kinds of interactive designed objects and systems.

COURSE LEARNING OUTCOMES

This course is meant to help students develop:

An understanding of different research methods;

The ability to accept different points of view;

The capacity to identify problems and potential solutions;

The capacity to work with and include others;

The facility to experiment with new ideas;

The skill of applying iterative thinking.

A NOTE ON IN-CLASS EXERCISES

Though most of the in-class exercises are done in groups, I strongly encourage you to make multiple copies of your process materials and outcomes. The Improved Exercises assignments require you to take material you've worked on during the in-class exercises and iterate on it. Keep your own notes and copies so that you're able to meaningfully move from your in-class outcome to an improved product. Keeping copies of process work is a valuable habit in general, as it helps document processes which are otherwise opaque.

GRADING

This is a Credit/No Credit course. While grades will be given for individual assignments, the final outcome of the course will be on a Credit/No Credit basis. A credit will be given for the course if the calculated final grade of all a student's assignments is equivalent to a B- (70%) or higher.

Because this course is offered by KMDI (the Knowledge Media Design Institute), it adheres to the Grade Interpretation Guidelines of KMDI's parent unit, the iSchool. The iSchool's Grade Interpretation Guidelines can be found at <http://current.ischool.utoronto.ca/grade-interpretation> and the University Assessment and Grading Practices Policy can be found at <http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/grading.pdf>.

TERMINOLOGY

This course spans a lot of different fields and disciplines. As a group, we may well have a comparatively small space of overlapping expertise. I encourage everyone to be unafraid of asking for definitions when unfamiliar terms come up. Whether the jargon is coming from me or from one of your colleagues, I ask you to raise your hand, wait to be acknowledged by the speaker, and seek clarification.

ASSIGNMENTS

1. Reading applications	4x5% = 20%	Due at the beginning of class, the week the reading is assigned
2. Improved exercises	4x5% = 20%	Due at the beginning of class, the week after we've done a given in-class exercise.
3. Mini capstone problem definition and environmental scan	10%	Due at beginning of class, week 5 (7/Feb)
4. Mini capstone interview guide/elicitation tool	10%	Due at beginning of class, week 6 (14/Feb)
5. Mini capstone sketches & paper or low-fidelity prototypes	15%	Due at beginning of class, week 8 (28/Feb)
6. Mini capstone testing protocol	10%	Due at beginning of class, week 10 (14/Mar)
7. Mini capstone final deliverables and presentation	15%	Due in-class, week 13 (4/Apr)

1. Reading applications

Reading applications are short (1-2 page, double-spaced) reflections on readings. You don't need to analyze or critique the reading, you simply need to reflect on how you could apply the ideas in a given reading to your own work. Choose a reading to reflect on from each of the four modules.

Reading applications are individual tasks.

2. Improved exercises

Every week, we do an in-class exercise. Improved exercises are a chance to spend more time with a few of those short tasks. From each module, choose one exercise to refine. Do the things you would have liked to have done if you'd had more time. Improved exercises are due at the beginning of class in the week following the in-class exercise. For example, if you want to work more on the Function

Storyboard exercise from week 5, you'll hand in your improved version at the beginning of week 6. **Improved exercises are individual tasks.**

Mini capstone project

The mini capstone project is an opportunity to—in groups—put together all of the skills covered in the course. In order to give the most time possible, the mini capstone is broken down into five stages. The mini capstone is a group project. All group members will receive the same grade. **The mini capstone project is a group task.**

3. Mini capstone problem definition and environmental scan

The problem definition and environmental scan should include, first, a description of the problem you are attempting to solve. Second, some consideration should be shown of who suffers from the problem being solved, and thus who might use your solution. Third, you should include a small environmental scan of other current solutions to your problem and how you might differentiate your solution.

4. Mini capstone interview guide/elicitation tool

An interview guide or other elicitation tool (take the readings from week three as inspiration for novel elicitation tools and methods) designed to gather information from your target user group about their needs. In addition to the tool itself (whether it's an interview guide or a manifest of items you would include in a cultural probe), please provide a short description of the context in which the tool would be used. Address details like whether the tool is being administered by a researcher or not, whether the tool is being administered in the context of potential use, what period of time the tool is meant to be used over, etc.

5. Mini capstone sketches & paper or low-fidelity prototypes

Provide a set of iterative sketches and their low-fi prototype outcome. Don't hesitate to include all of the sketches you've done so far for your project. The low-fidelity prototype can be paper-based or digital. The only hard requirement is that it should give an indication of the form your product will take, and indicate some of the key interactions a user could have with it. It needs to represent, in some way, paths a user could take in interacting with a function of your product.

6. Mini capstone testing protocol

Your testing protocol should provide guidance for a user researcher or usability researcher to do a user test with your low-fidelity prototype. Include information on what questions the user should be asked, what details can be given in response to the user's comments, and which functions of your project can or cannot be tested at this stage.

7. Mini capstone final deliverables and presentation

The final deliverables for the mini capstone project should reflect and build on the previous stages of development. A medium-fidelity prototype is an acceptable outcome, as is an animation, video, high-fidelity flipbook, or well-polished Wizard of Oz prototype (see part two of Buxton (2007) for more information on these kinds of deliverables). Your presentation should show the class what problem you've chosen to address, how you've developed your approach to solving that problem, and what outcome you've arrived at. Should you so desire, you may also produce a poster to enter into KMDI's end-of-year poster competition.

COURSE SCHEDULE

Module 1: Requirements gathering and problem definition

Week 1 (10/Jan): Introduction to the class, introduction to user experience and interaction design

READINGS: Syllabus, [Norman & Nielsen definition of user experience](#); [Usability.gov definition of user-centred design](#) (we'll read these together in class)

ACTIVITY: Icebreaker: Fantasy interaction design.

Week 2 (17/Jan): Problem definition and environmental scans

READINGS: Chapter 1 of Luker (2008); Johansson & Messeter (2005); slides on environmental scans and SWOT analysis from Washington state department of health; Graham, Evitts, & Thomas-MacLean (2008)

OPTIONAL READINGS: Blythe & Wright (2006)

ACTIVITY: Group problem-finding exercise: groups need to come up with 5-10 problems, write a sentence summarizing each, and then elaborate the problem space for one of them

Week 3 (24/Jan): Requirements gathering and elicitation

READINGS: Gaver, Dunne, & Pacenti (1999)

OPTIONAL READINGS: Rode, Toye, and Blackwell (2004) on abstraction and programming of appliances, which has an excellent description of its elicitation methods

ACTIVITY: Developing a plan for requirements gathering

PROJECT: By the end of week three, groups for the capstone project should be formed. Submit a list of group members by the end of class.

Module 2: Screen-based interactions

Week 4 (31/Jan): Stages of prototyping for screen-based interaction

READINGS: Richardson (2013).; three Buxton chapters: The Anatomy of Sketching, Experience Design vs. Interface Design, Sketching Interaction (these two chapters are included in an extract together).

ACTIVITY: Sketch brackets

Week 5 (7/Feb): User experience and interaction basics

READINGS: [Usability.gov Interaction Design Basics](#); [UX Booth Complete Beginner's Guide to Interaction Design](#)

ACTIVITY: Function storyboards

DUE: Mini capstone problem definition and environmental scan

Week 6 (14/Feb): User testing basics

READINGS: The [Usability.gov page on prototyping](#) is a very quick read on the value of iterative testing. Smashing's "[The Skeptic's Guide to Low-Fidelity Prototyping](#)" is a good supplementary read on prototyping, with a section on testing low-fi prototypes. Chapters 7 and 11 of Meyers, Badgett, & Sandley (2012) provide an in-depth explanation of user testing (7) and mobile user testing (11) on more advanced prototypes.

ACTIVITY: Testing a website – pick a website or an app and write up a script for a talkalong test of one of its functions. Test with a colleague.

DUE: Mini capstone interview guide/elicitation tool

Week 7 reading week (no class) 21-24/Feb

Module 3: Digital fabrication and non-screen interactions

Week 8 (28/Feb): Internet of Things and wearables

GUEST LECTURE: Mike Doell, Industrial Designer, Ross + Doell

READING: Safavi & Shukur (2014)

OPTIONAL READING: Rich & Miah (2017)

ACTIVITY: Fantasy IoT device. Conceptualize and depict a physical device and a set of interactions which could be carried out with it.

DUE: Mini capstone sketches & paper or low-fidelity prototype

Week 9 (7/Mar): Digital fabrication for medical contexts

READINGS: Schmidt et al (2015); 3D Printing Industry beginner's guide to 3D printing, specifically the pages on the [technology](#), [processes](#), and [materials](#). Other sections can be skimmed, but aren't as strong as the technical pages.

ACTIVITY: Visit to APIL lab at Toronto General

Module 4: Project

Week 10 (14/Mar): Software survey week

READINGS: Frank & Carvallo (2003) ; to get an impression of the variety of simple prototyping software available, consult the lists of wireframing tools provided by [Creative Bloq](#) and [Mashable](#). It's worth noting that the Mashable list is from 2010. While, at the time, it highlighted free tools, some of the tools listed have now moved to a paid model.

ACTIVITIES: Software overviews

PROJECT: About an hour of group work time

DUE: Mini capstone testing protocol

Week 11 (21/Mar): Skills and topics based on interests expressed by the class

READINGS: TBA, based on the interests of the class.

ACTIVITY: An activity chosen based on the interests of the class

PROJECT: About an hour of project work time

Week 12 (28/Mar): Polishing your prototype

READINGS: [Lovett \(1999\)](#); [Guy \(2012\)](#)

OPTIONAL READING: Rodríguez Estrada & Davis (2014); Tonkinwise (2011).

ACTIVITY: Graphic design and composition skills

PROJECT: About an hour of project work time

Week 13 (4/Apr): Final presentations

ACTIVITY: Final presentations

DUE: Mini capstone final deliverables and presentation

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EMAIL POLICY

Email is to be used for emergencies, private or confidential concerns, and—in extenuating circumstances—booking appointments outside of office hours. For everything else, we have other channels of communication. If you have general questions, concerns, or require clarification on something, the best place to raise your questions or concerns is in class. If you think of something outside of class, I invite you to post about it on our section of the TRP Wordpress page, where the answer to the question (whether provided by me or by one of your colleagues) can benefit the whole class. If you want to talk to me individually, I invite you to attend my office hours. If you really can't make it to office hours, we can work out another meeting time.

WRITING SUPPORT

If you require writing assistance, you can make use of the writing support provided to graduate students by the SGS Office of English Language and Writing Support (<http://www.sgs.utoronto.ca/currentstudents/Pages/English-Language-and-Writing-Support.aspx>). The services are designed to target the needs of both native and non-native speakers and all programs are free. Please consult the current workshop schedule (<http://www.sgs.utoronto.ca/currentstudents/Pages/Current-Years-Courses.aspx>) for more information. I am also happy to discuss writing, mechanics, and communication during my office hours if you have concerns.

ACADEMIC INTEGRITY

Please consult the University's site on Academic Integrity (<http://academicintegrity.utoronto.ca/>). KMDI is part of the iSchool, which has a zero-tolerance policy on plagiarism as defined in section B.I.1.(d) of the University's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>). You should acquaint yourself with the Code. The How Not to Plagiarize website provides more information on avoiding plagiarism (<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>).

ACCOMMODATIONS

Students with diverse learning styles and needs are welcome in this course. If you have a disability or a health consideration that may require accommodations, please feel free to approach me and/or the Accessibility Services Office (<http://www.studentlife.utoronto.ca/as>) as soon as possible. The Accessibility Services staff are available by appointment to assess needs, provide referrals and arrange appropriate accommodations. The sooner you let them and I know your needs, the quicker

we can assist you in achieving your learning goals in this course.

STATEMENT OF ACKNOWLEDGEMENT OF TRADITIONAL LAND

We wish to acknowledge this land on which the University of Toronto operates.

For thousands of years it has been the traditional land of the Huron-Wendat, the Seneca, and most recently, the Mississaugas of the Credit River.

Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.