SI 699-001 - MSI Mastery Course (HCI) Winter 2021

Location: Online / Zoom link, Meeting ID: 984 8066 7486, Passcode: 937885
Time: Thursday 1-2:30 PM ET, 30 minute coaching sessions with teams weekly,
Instructor: Lija Hogan (email)
Office hours: Friday, 10:00 am - 12 pm, Signup Sheet (30 minute blocks), Zoom link, Meeting ID: 944 7520 8186

Course Overview

This is a special time to be in the practice of creating digital experiences. New challenges that are stretching the needs, expectations, and capabilities of design teams and the people that they are creating experiences for are arising and evolving quickly. This is an opportunity for you to dream big; to create a thought experiment that addresses a need for an audience that you are passionate about, or a foundation for a product that you might decide to build upon after you graduate.

This course will require you to **demonstrate mastery** in the application of UX design and research theories, concepts, and principles. You will:

- **Define a problem that you would like to solve using human-centered practices.** You will conduct research to uncover user needs, articulate service requirements, and document your results.
- **Propose a design approach that addresses your findings.** You will develop concepts, prototype, and refine them.
- **Communicate design solutions to stakeholders.** You will get several opportunities to hone your message and create deliverables that are resonant.

You will have opportunities to integrate methods and theories about user experience design in this course by engaging in a whole process from identifying design issues to developing design solutions. You will work on a single project end-to-end during the semester. You will either work on a project individually or in groups of up to 4 people; I recommend that you strongly consider the group experience, as it will enable you to take on a challenge of broader scope and complexity. You will choose and design projects from scratch. For logistical reasons, I am recommending that you elect to work through a solution of your own choosing. However, projects for real-world clients will be allowed as long as you meet the course requirements and have practical strategies for managing the complexities that come with the uncertainties of the current environment.

Course content will be delivered both synchronously and asynchronously. All synchronous meetings will be available online.

Course Prerequisites:

Prerequisites to this course include:

- 501 Contextual inquiry and consulting foundations
- 506 Programming I
- 520 Graphic design
- 539 Design of Complex Websites
- 582 Introduction to interaction design
- 588 Fundamentals of human behavior
- 622 Needs assessment and usability evaluation

About Mastery Courses:

As is typical for mastery courses, this is a one-semester course that requires students to demonstrate command of the key theories, methods, approaches, and capabilities required for entry into a specific class of information professions. Unlike other courses with significant faculty-led structure and scaffolding, mastery courses require you to demonstrate initiative and show that you can independently **design, implement, evaluate, and complete a sizable project**, with faculty *primarily in the role of advisor and mentor*. Successful completion of a mastery course **implies a level of proficiency comparable to or exceeding a well-launched employee in a field**.

Course Objectives

While you are expected to have learned these skills previously, the purpose of this course is to demonstrate mastery of these skills.

I. Knowledge
- Describe core research and design processes used in UX
- Describe alternate approaches to UX design and design processes and the pros and cons of these variations

II. Comprehension and Application
- Identify, follow, and defend use a user-centered design process:
    i. Understand and frame problems
    ii. Research/investigate problems
    iii. Fully explore the solution space
    iv. Identify acceptable solutions and identify pros/cons of each solution
    v. Refine the solution
    vi. Evaluate the solution and present your results and process using an iterative process
- Demonstrate Ability To Conduct User Experience Research

      i.   Understand who your target users are and articulate who your target users are (primary and secondary users)

     ii.   Use models such as personas and scenarios to represent preliminary research findings

    iii.   Demonstrate ability to collect and analyze user data beyond on-campus interviews and surveys

    iv.   Organize your research findings and use affinity diagrams to create research summaries

     v.   Formulate and communicate a theory or research-supported story that explains your results

III. Analysis & Synthesis

- Analyze an interaction design problem and propose research and design processes, that justify the process and identify trade-offs
- Compile user data and elaborate on findings and how these findings inform your solution
- Compare alternative solutions and your final research and design decisions

IV. Evaluation

- Justify and be able to defend your design process and implementation choices
- Justify and be able to defend your reasoning for selecting target users given the selected problem you decide to solve
- Justify and be able to defend your final project solution with your research method, results, and quotes from your target audience
- Justify your design choices (graphic, flow, design elements, etc.) with your knowledge of design principles and effective visualization techniques
- Recommend next steps for individual or group who wants to take over your project; explain the artifacts that you will leave behind

Materials

No textbook is required for this class. However, I can recommend several resources that I find to be of use and that have been recommended to me:

- Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions by Bella Martin and Bruce Hanington. You will likely use this book throughout your UX Research and Design career.
- Resources related to topic areas of interest to the class
- Class Miro Board
- Please see the Files section on Canvas for Books and Journal Articles for more resources. I am adding resources in response to your feedback

You should maintain a notebook or digital documentation that can be shared with your team and me to document your process and to keep sketches of those concepts resulting from

brainstorming sessions. You will be asked to submit these sketches for each milestone. We will be using Miro for this purpose for the class.

Note: The syllabus is tentative and is subject to change and updates. Students will be updated throughout the semester (1/21/2021)

Topics	Synchronous Class Date	What is happening in class and what you should be doing this week
Week 1: Introduction and Course Overview (Project Brainstorming)	1/21	Complete Personal Reflection by Wednesday, 1/27 at 11:59 pm
Week 2: Planning: UX Strategy, Intersectionality focused User Research	1/28	Lecture/Discussion around UX Strategy and User Research Starting to form groups Brainstorming project ideas Complete Strategy Reflection by Wednesday 2/3 at 11:59 pm
Week 3: Planning II: Concept Development	2/4	We will be discussing needs assessment, understanding your stakeholders, competitive analysis/benchmarking; Teams already formed / make adjustments as necessary. Complete Concept Development Reflection by Wednesday, 2/10 at 11:59 pm
Week 4: Agile Development and Project Management / Brainstorming	2/11	Lecture/Discussion on Agile Development and Project management, Competitive Landscape

		Complete Agile Development and Project management reflection by Wednesday, 2/17 pm
Week 5: Milestone 2 Presentations	2/18	Peer walkthrough of Concept Proposal Complete evaluations of group projects Use this [form](#) to enter feedback
Week 6: Information Architecture	2/25	Lecture/discussion on trends in Information Architecture, validating and managing complex information spaces, project management, and turning research into design. Complete Information Architecture Engagement Points assignment by Tuesday, 2/23. Consider completing the extra credit World IA day attendance assignment.
Week 7: Inclusive UX Design and Specification	3/4	Lecture/Discussion on advanced topics on UX design and specification building. Complete UX Design and Specification Engagement Points assignment by Wednesday, 3/10 at 11:59 pm
Week 8: Entrepreneurship and Innovation / Implementation Planning	3/11	Lecture/Discussion on entrepreneurship and innovation Complete Entrepreneurship and Innovation Engagement Points assignment by Wednesday, 3/17 by 11:59 pm
Week 9: Communicating your Design and Research Process	3/18	Lecture/Discussion on communicating design and research decision-making and findings

		Complete Communicating your design and research process Engagement Points assignment by Wednesday, 3/24 at 11:59
Week 10: Peer Walkthrough	3/25	Peer Walkthrough Complete evaluations of group projects
Week 11: Peer Walkthrough	4/1	Peer Walkthrough Complete evaluations of group projects
Week 12: Design issues and Trends	4/8	Design issues and trends: TBD Complete reflection by Wednesday, 4/14 at 11:59 pm
Week 13: Class Wrap-up & Check-in Session & Demo and Final Presentation	4/15	Demos & Final Presentations! (Final Poster, Video and Project Brief Due by 11:59 pm) Complete Reflection about achievement of class goals by Wednesday, 4/21

NOTE: To be successful, I recommend that you have a standing meeting and/or work session of AT LEAST 3 hours per week with your group (if applicable). If you are working individually, you may wish to find an accountability partner and schedule working sessions.

Technical Format/Delivery

The University of Michigan offers an extensive list of software for free or at a low cost for students; to the extent possible, please use these options. If you find you need something more specialized, please let me know. We will use Miro as a virtual whiteboard.

We will be holding the class meetings virtually using Zoom. Some matters of Zoom etiquette:

To the extent possible, please turn on your camera. This will enable people to have better feedback and communicate more effectively. This means that you should be in an environment where this is comfortable for you to do and that you should be prepared to appear in a public

setting. We should extend grace to one another as we communicate virtually; children, roommates, and pets may be onscreen, and that is just fine. Also, due to technology and bandwidth limitations, I understand that this may not be possible. We will work together to ensure that everyone is able to participate fully in class discussions.

Please mute yourself when you are not speaking. As a general rule, it is easier to have conversations when only one person is speaking at a time.

Use chat on Zoom if you do not want to break into the conversation. I have found that it is a great way to intensify the conversation, so I watch Chat as well as present to talk.

We will be using the Discussions module to assist with group formation and communications.

Attendance Policy

This class does not have a formal attendance policy but your group activities and Engagements points both rely on you being "in class" or watching a recording later. The most critical classes to attend synchronously will be later in the term when presentations are happening. If we have people participating in class who are sitting outside of the Eastern time zone, we will accommodate those scheduling needs to ensure we find a time that works best for the class. This may include finding alternative meeting times for small groups.

You are responsible for finding out what you missed in class by referring to the syllabus and to your classmates. It is my hope that we extend grace and flexibility to one another throughout the semester. That said, it is critical that you do your best to adhere to the expectations that you set with your colleagues.

Assignments

The final project will be worth 80% of your final grade and the remaining 20% will be Engagement points, which you will earn through a mixture of synchronous and asynchronous means.

There will be five (5) milestones associated with the project, namely:

1. **Brief Concept Proposal and Survey** (5 points): Based on your interests or results of your observations write a brief proposal about your concept (i.e., initial thoughts about

your target area, who your target audience may be, and related products and/or research). Due 2/5 by 11:59pm

2. **Concept Proposal** (5 points): Based on initial ideation, each individual or group will produce at least three high level concepts, along with a sketch of a plan describing how each would be researched using formative methods and what the key design questions would be. Due 2/26 by 11:59 pm

3. **Formative Study Results and Design Proposal** (15 points): Based on the findings from a formative study to understand users' needs, and to develop empathy for the context of use, a more detailed design proposal for one of the initial concepts will be presented, along with a justification for the proposed direction and a detailed plan for carrying out the project. Due 3/12 by 11:59am

4. **Prototyping Results and Design Refinement** (Prototype and Implementation Plans) (10 points): As a step in the development of the selected design concept, user feedback will be sought using low-fidelity experience prototyping methods. Based on the findings from these studies, refinements to the initial design proposal will be presented. Due 3/26 by 11:59 pm

5. **Final Deliverables: Poster, Formal Design Proposal, Video, Prototype and In-Class Demo Presentation** (45 points): The final design will be presented as a live demo, which will seek to document and "sell" the design to an imagined set of stakeholders. Students will demonstrate knowledge of web-based technologies required for their demo to function interactively and prototype their demo accordingly (e.g., demonstrated knowledge of MVC architecture, CSS, HTML.) To make your proposal persuasive, you must synthesize the insights obtained from each phase of the project, including ideation, design refinements, needs finding results, evaluations, and final concept. The proposal will be accompanied by a short video showing the imagined interaction with the designed system. (Videos will be shown and brief presentations delivered during class on 4/15, online submissions due by 11:59 pm on 4/16)

Your final project will unfold across several milestones, beginning with an exploration of initial design concepts and ending with a demo and final video prototype.

You have complete flexibility when thinking about what type of problem to solve. Some suggested areas to consider:

- Health, Activity & Fitness Tracking
- Smart Homes
- On-Demand Economy (sharing economy, gig economy, etc.)
- Education
- Machine Learning / Artificial Intelligence
- Social Media
- Workplace Environments
- ...more

If you are still unsure of a topic, try observing: people, a specific area of interest (high-traffic areas, low-traffic areas, physical spaces, etc.), or a place. Take notes for about one hour and then, identify any issues you noticed or interesting aspects of your observation. Consider developing concepts to address an issue or issues that you identified.

This is an intentionally broad mandate and you are encouraged to consider multiple potential audiences, perspectives, scales, technologies, and forms of memory before selecting a single concept to develop in depth.

All design takes place within a set of constraints. It will be part of your task to discover the particular constraints and success criteria for your particular design, however there are some basic dimensions that can provide a starting point for your thinking about what issues your design will ultimately have to address.

- **Acceptability:** What arguments can you provide that your design will be acceptable to its intended audience? Of particular interest with many pervasive systems is the question of privacy -- what level of privacy will those who participate in the system expect, what are the tradeoffs, and how does your system navigate the potential concerns?
- **Appropriateness:** How does your design fit in with audience members' current and imagined practices, norms, values, goals, and desires? Key to this concern is the question of empathy. To what extent does your design exhibit a deep understanding of your audience and what will work for them?
- **Usefulness:** What need does your system fulfill and/or what benefit does it provide, and to whom? Does it provide a new capability or a new way of doing something that your audience already does? What arguments can you provide for the value of your system? Does the value proposition differ for different members of your audience?
- **Pleasurability:** Does the system provide a pleasurable, meaningful, and/or aesthetically satisfying experience for its audience? Keep in mind that compelling and pleasurable experiences need not be calm or "pleasant," but can be also be produced through provocation and engagement.
- **Legibility/Understandability:** Does the system make sense to its audience? Is it usable, comprehensible, and meaningful?
- **Plausibility:** Can you construct a believable argument about how the conditions (technological, social) for your system's success will prevail in some designated future timeframe? What changes will need to happen, whether through "organic" change or targeted investment by some invested institution in order for your system to achieve ultimate success? How successful would your system be under less ideal conditions, and how does the performance of the system degrade gracefully?
- **Demonstrability:** Given that your system is designed to achieve its full glory under projected future conditions, how can you convey the intended experience

using today's technologies? What tools and components are available for you to mash-up and prototype the intended system experience in order to get feedback from audience members and create buy-in with potential stakeholders?

Engagement - 20 points

Attending or listening to each class session will be worth 1.5 points. As some of the contact hours will be asynchronously, there will also be a range of videos, readings, podcasts, and other content that you will read, watch or listen to and submit reflections about. Each assignment will be worth 2 points.

Grading

We will be using the grading standards established by the School of Information and the University of Michigan.

In alignment with the UMSI grading policies for this academic year, the regular A+ through C- grading system will be maintained. Students who earn D or E grades will receive a "No Record Covid (NRC)." Students receiving an NRC will be able to request that it be converted to a letter grade.

This is how class points align with letter grades:

A+ 100+
A 94-99
A- 90-93
B+ 87-89
B 84-86
B- 80-83
C+ 77-79
C 74-76
C- 70-73

Regrading Policy
If you feel that the merit of your work on any assignment has not been fully recognized, you may choose to submit the assignment for re-grading. To do so, you must explain in an email why you feel your work deserves re-grading. You should provide details and point to specifics in the assignment that you feel merit a higher grade. One of three outcomes is possible: your grade may be raised, it may remain the same, or it may be lowered.

Religious/Cultural Observance

Persons who have religious or cultural observances that coincide with this class should let me know in writing by email within the second week of the class. I encourage you to honor your cultural and religious holidays! However, if I do not hear from you by the end of the second week, I will assume that you plan to attend all class meetings.

Point of View

The readings and my and your comments in class will suggest particular points of view. I encourage you to disagree with the ideas in the readings and lectures as well as the perspectives of your colleagues in the course. A significant part of the educational experience is learning about the complexity of various issues. Therefore, it is important that we listen and respect one another, but we do not have to agree. A richer discussion will occur when a variety of perspectives are presented in class for discussion.

Communication

Canvas is the dissemination method for course materials including lecture notes, assignment descriptions, and the course schedule. You are responsible for keeping up-to-date with the materials on Canvas.

When you email me, we are interacting in a professional context. I expect that you will use appropriate etiquette. Use suitable salutations and signatures. Do not use text message slang or Internet slang.

Research suggests that use of personal devices during instructional time can result in worse retention of class material and can be distracting to other students. I will sometimes encourage device use; other times I will not.

Academic Integrity

All assignments in this course are clearly designated as "group" or "individual" assignments. UMSI follows LSA guidelines for academic integrity as follows: The LSA academic community, like all communities, functions best when its members treat one another with honesty, fairness, respect, and trust. The College holds all members of its community to high standards of scholarship and integrity. To accomplish its mission of providing an optimal educational environment and developing leaders of society, the College promotes the assumption of personal responsibility and integrity and prohibits all forms of academic dishonesty and misconduct. Academic dishonesty may be understood as any action or attempted action that may result in creating an unfair academic advantage for oneself or an unfair academic

advantage or disadvantage for any other member or members of the academic community. Conduct, without regard to motive, that violates the academic integrity and ethical standards of the College community cannot be tolerated. The College seeks vigorously to achieve compliance with its community standards of academic integrity. Violations of the standards will not be tolerated and will result in serious consequences and disciplinary action. For more information, please see: http://www.lsa.umich.edu/academicintegrity/index.html

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, and the way 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 typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. I will treat any information you provide as private and confidential. SSD can be contacted at 734-763-3000 or http://ssd.umich.edu/.

We will be recording classes using Zoom so they are available later for viewing.

Student Mental Health and Well-being

I support your health and wellbeing. If you are experiencing a health challenge, or some other personal life challenge, and an adjustment of course timelines can help you work through it, please come talk to me early so we can discuss your options. I encourage all of you to try to get enough sleep, to prioritize taking care of yourself, and to try to find social support from people around you. During the pandemic, upfront and direct communication becomes even more critical, as multiple illnesses on teams or in class may require more coordination. Given the challenges we may see, please extend grace to one another and know that I will be doing the same with all of the students in the class.

At the university level, 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.

If you or someone you know may not have access to enough food, visit the Maize and Blue Cupboard. It is open to all UM students. You can go look around, or leave with a couple grocery bags, it's your choice.