



School of Information Sciences

Make, Design, and Learn in Libraries

IS582

Fall 2020

Fridays, 9-10:50am, Online

[Last updated in August 2020]

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Course Description (Catalog)

This course teaches knowledge and skills needed for information professionals to work successfully in a makerspace, learning lab, or other creative spaces. Using the combination of seminar and hands-on instructions, the course covers relevant theories, research, practices, and technologies on making, design thinking, and learning in libraries.

Pre- and Co-requisites

None

4 Credit hours

Student Learning Outcomes

Upon successful completion of the course, students will be able to:

- Identify competencies needed for professionals working in a library makerspace
- Identify relevant theories and research on the maker movement in libraries and education
- Discuss the need and role of makerspaces in re-conceptualizing libraries in this contemporary knowledge society
- Identify relevant theories and best practices that promote learning in libraries
- Identify issues on managing a makerspace
- Locate and select a range of tools, resources, and programs that can be used in a makerspace

- Analyze the needs and assets of the community that a library makerspace serves
- Develop strategies to engage community and develop a sense of community in a makerspace
- Propose a makerspace or maker program based on the identified needs and assets
- Design an evaluation plan for a makerspace
- Discuss the issue of diversity, inclusion, and equity in library makerspaces
- Learn the basics of different fabrication technologies
- Pursue a maker project that is personally meaningful and/or potentially contributing to a community
- Understand the characteristics and processes of Design Thinking
- Apply the design thinking process to propose a library program, service, or space

Course Context

This course meets a number of learning outcomes connected to program objectives for the MSLIS program, which in turn connect to larger iSchool and University of Illinois learning goals.

Program Learning Outcomes

- Apply foundational concepts, theories, and principles to problems of information organizations and access
- Communicate capably with diverse stakeholders
- Use evidence to help address information problems, meet information needs, and create relationships in their institutions, communities, profession, and the world
- Compare and critique contemporary information practices, structures, and standards in the relation to historical and global alternatives.
- Apply core ethical principles to professional practice

iSchool Goal

This course meets the following goal:

- Maintain global leadership in education for the information professions

University of Illinois Campus-Wide Learning Goals

1. Intellectual Reasoning and Knowledge
2. Creative Inquiry and Discovery
3. Effective Leadership and Community Engagement
4. Social Awareness and Cultural Understanding

Course Materials

The required supplies list is available here:

https://docs.google.com/document/d/1VLKV_87iBcFvkNtUdWQwYG4INgw-jq_U7xLHesiR7Xg/edit#heading=h.9tqaam217mux

No textbook is required. All readings, viewings, and content are available online or via library databases.

Bio of Learning Facilitators

Kyungwon Koh is an Associate Professor at the iSchool. She earned her MLIS and Ph.D. degrees at Florida State University and BS from Yonsei University in South Korea. Her areas of expertise include the maker movement in libraries and education, learning and community engagement through libraries, human information behavior, youth services, and competencies for information professionals. She lives in Champaign, IL with her husband, twin baby girls, and Bear (their 12-year-old golden retriever).

Emilie Butt is the Engagement and Instruction coordinator for the Champaign-Urbana Community Fab Lab. Her background is in community engagement and public teen librarianship, having earned her MSLIS, with a focus on Youth Services, and BA from the University of Illinois at Urbana-Champaign. Her current work focuses on building makerspace-oriented programming for local teens, as well as teaching university courses on makerspaces, game design, and escape room design. Outside of work she enjoys gaming, painting, and spending time with her dog (Eevie) and two sugar gliders (Artemis and Persephone).

Assignments and Methods of Assessment

Assignment Evaluation

Your assignments in this class are credit-for-completion. That is, if you complete the work in good faith and at least at the minimum level required in the assignments, you will get the full credit. We want this class to be a safe and supportive space, where we can take risks, experiment, innovate, and be creative--fail toward spectacularly! In making this choice to move away from assigning grades, we are operating with the understanding that you will complete the work in good faith: honestly, intentionally, and striving to do your best. As an adult learner, you are here by choice and your learning is your responsibility; the class offers structure, environment, and encouragement for you to work toward your goals.

*Acknowledgement: this evaluation policy was developed by Dr. Carol Tilley and adapted by Dr. Kyungwon Koh

Late submissions

We will accept work submitted after the deadline but no more than one week late, and we will impose a late penalty. If the assignment is late and merits points equal to an A, we will assign points equal to an A-. Students will receive a grade of "0" (F) for assignments not submitted within a week of deadline. We may not be able to accept any late work for the final projects because of the grade submission deadline.

If you have an emergency or illness that prevents you from completing work in a timely manner, please contact us in advance. Written documentation will be required to verify the emergency.

Incomplete grades

Students must initiate an incomplete request by contacting the instructor. An exceptional request for an incomplete grade is most often granted to students encountering a medical emergency or other extraordinary circumstances beyond their control. The instructor and student must agree on a due date for completion of coursework. The student must fill out the Incomplete Form and get it signed by the student, the instructor, and the student's academic advisor to the front office:

<https://uofi.app.box.com/v/ISIncompleteForm>

Please see the Student Code for full details: <http://studentcode.illinois.edu/article3/part1/3-104/>

Grading Scale

94-100 = A

90-93 = A-

87-89 = B+

83-86 = B

80-82 = B-

77-79 = C+

73-76 = C

70-72 = C-

67-69 = D+

63-66 = D

60-62 = D-

59 and below = F

Participation – 20

Technology assignments -- 30

Making project -- 25

Design Thinking project – 25

Total – 100

Course Policies

- The iSchool expects students to attend all classes except in cases of emergency. See Student Code on Attendance: <http://studentcode.illinois.edu/article1/part5/1-501/>
- Be on time for the beginning of class and stay until the end.
- If your absence is unavoidable, please notify Kyungwon and Emilie by e-mail before class or as soon as possible. We may assign you makeup work for any class you miss either in its entirety or a significant portion.
- Students who miss 3 or more class sessions may not pass the course. Again, please contact us if you have any emergency or illness that prevents you from completing the requirement.
- You must complete all required assignments in order to pass this class.
- You are expected to demonstrate respect for the ideas, perspectives, and opinions of all other members of the class at all times. Failure to observe this course requirement can result in a failing course participation grade.

Academic Integrity

The iSchool has the responsibility for maintaining academic integrity so as to protect the quality of education and research in our school and to protect those who depend on our integrity.

Consequences of academic integrity infractions may be serious, ranging from a written warning to a failing grade for the course or dismissal from the University.

See the student code for academic integrity requirements:

<http://studentcode.illinois.edu/article1/part4/1-401/>

Please review and reflect on the academic integrity policy of the University of Illinois, http://studentcode.illinois.edu/article1_part4_1-401.html, to which we subscribe. By turning in materials for review, you certify that all work presented is your own and has been done by you independently, or as a member of a designated group for group assignments.

If, in the course of your writing, you use the words or ideas of another writer, proper acknowledgement must be given using APA style. Not to do so is to commit plagiarism, a form of academic dishonesty or plagiarism. Please be aware that the consequences for plagiarism or other forms of academic dishonesty will be severe. Students who violate university standards of academic integrity are subject to disciplinary action, including a reduced grade, failure in the course, and suspension or dismissal from the University.

Statement of Inclusion

<http://www.inclusiveillinois.illinois.edu/mission.html>

As the state's premier public university, the University of Illinois at Urbana-Champaign's core mission is to serve the interests of the diverse people of the state of Illinois and beyond. The institution thus values inclusion and a pluralistic learning and research environment, one which we respect the varied perspectives and lived experiences of a diverse community and global workforce. We support diversity of worldviews, histories, and cultural knowledge across a range of social groups including race, ethnicity, gender identity, sexual orientation, abilities, economic class, religion, and their intersections.

Religious Observances

In keeping with our Statement of Inclusion and Illinois law, the University is required to reasonably accommodate its students' religious beliefs, observances, and practices in regard to admissions, class attendance, and the scheduling of examinations and work requirements.

If you anticipate the need for an accommodation, please communicate with your instructor in the first two weeks of class. If you are an undergraduate student and your instructor requires an absence letter, you must fill out the Religious Observance Accommodation Request form:

<http://odos.illinois.edu/community-of-care/resources/docs/Religious-Observance-Accommodation-Request-Form.pdf>. Other accommodations may also be available.

Week-by-Week Topic and Assignment Schedule [Subject to change with a prior notice]

Week	Topic	Technology	Due/Guests
1 (8/24-30)	Introduction: Overview of the Maker Movement and Design Thinking		
2 (8/31-9/6)	Makerspaces in libraries: Re-conceptualizing libraries		Maker journal 1 due Sun, 9/6
3 (9/7-13)	Makerspace as a learning space	Electrical Cutters - Paper Circuits	Maker journal 2 due Sun, 9/13
4 (9/14-20)	Diversity, Inclusion, and Equity in Making		Paper Circuits due Fri 9/18, Maker journal 3 due Sun, 9/20
5 (9/21-27)	Developing and managing a Makerspace	Laser Engraver - Laser Lanterns	Maker journal 4 due Sun, 9/27
6 (9/28-10/4)	Makerspace as a community catalyst		Laser Lanterns due Fri 10/2, Maker journal 5 due Sun, 10/4
7 (10/5-11)	*E-Textiles	E-textiles - Soft Circuit Plushies	Maker journal 6 due Sun, 10/11
8 (10/12-18)	Evaluating Making/ Virtual Maker Showcase		Plushie due Fri 10/16, Maker journal 7 due Sun, 10/18
9 (10/19-25)	Design Thinking in Libraries		
10 (10/26-11/1)	Empathize	3D Methodologies	Empathize due Sun, 11/1
11 (11/2-8)	Defining needs and problems;		-Define due Sun, 11/8 -Sara Benson-

	Ideate solutions		Copyright in makerspaces
12 (11/9-15)	*Small Electronics	Small Electronics - Circuit Playground Express Singing Robot	Ideate due Sun, 11/15
13 (11/16-22)	Prototype		Robot due Fri 11/20, Prototype due Sun, 11/22
14 (11/23-29)	Thanksgiving Week (No class)		
15 (11/30-12/6)	Design Thinking project presentations		Design Thinking final essay due Sun, 12/6
16 (12/7-9)	Reflection		Final reflection due Wed, 12/9

Accessibility Statement

To insure disability-related concerns are properly addressed from the beginning of the semester, we request that students with disabilities who require assistance to participate in this class contact us as soon as possible to discuss your needs and any concerns you may have. The University of Illinois may be able to provide additional resources to assist you in your studies through the office of Disability Resources and Educational Services (DRES). This office can assist you with disability-related academic adjustments and/or auxiliary aids. Please contact them as soon as possible by visiting the office in person: 1207 S. Oak St., Champaign; visiting the website: <http://disability.illinois.edu>; calling (217) 333-4603 (V/TTY); or via e-mail disability@illinois.edu. NOTE: I do not require a letter from DRES in order to discuss your requested accommodations.

Land acknowledgement Statement

We would like to recognize and acknowledge that we are on the lands of the Peoria, Kaskaskia, Piankashaw, Wea, Miami, Mascoutin, Odawa, Sauk, Mesquaki, Kickapoo, Potawatomi, Ojibwe, and Chickasaw Nations. These lands were the traditional territory of these Native Nations prior to their forced removal; these lands continue to carry the stories of these Nations and their struggles for survival and identity.

As a land-grant institution, the University of Illinois has a particular responsibility to acknowledge the peoples of these lands, as well as the histories of dispossession that have allowed for the growth of this institution for the past 150 years. We are also obligated to reflect on and actively address these histories and the role that this university has played in shaping

them. This acknowledgement and the centering of Native peoples is a start as we move forward for the next 150 years.

More information: https://chancellor.illinois.edu/land_acknowledgement.html

COVID-19 Statement

In keeping with University and iSchool policy, all students are required to engage in appropriate behavior to protect the health and safety of our community. If you are on campus, this includes wearing a facial covering properly, maintaining social distance (at least 6 feet from others at all times), disinfecting the immediate seating area, and using hand sanitizer.

If you feel ill or are unable to come to class or complete class assignments due to issues related to COVID-19, including but not limited to: testing positive yourself, feeling ill, caring for a family member with COVID-19, or having unexpected child-care obligations, should contact their instructor immediately and cc their advisor.

Resources to help you succeed:

Library Resources

<https://www.library.illinois.edu/infosci/>

Writing Resources

The iSchool Writing Resources is the in-house writing support team for graduate students at the iSchool. They are here to help you with your writing and help you feel more comfortable and confident in your skills. The writing consultants are not professors or evaluators. They simply know the struggles of graduate and undergraduate-level writing and want to help you learn how to succeed and improve your writing skills. The iSchool writing consultants can help you with every step of the writing process. For detailed information on our services please visit our website:

<https://publish.illinois.edu/ischoolwritingresources/>

Major Assignments Descriptions

1. Participation

The participation includes weekly attendance, active engagement in all class activities, demonstration of respect to other people's perspectives and opinions, and completion of weekly submissions, including posting discussion questions.

2. Technology Assignments

Each week you will receive instructions on each fabrication technology of the week. Work may include videos and resources to look through prior to class, an in-class workshop, and finishing your project from the workshop during the following week.

3. Making Project

For a professional to facilitate making in a library makerspace, it is important they have first-hand experiences of making based on their own interest, understand the iterative nature of the process, and feel the power and joy of making themselves. This assignment includes identifying a project, making, journaling, and sharing the project in class. You will create a maker project of your choice, document the process, and share the project and story behind your maker project.

Maker journals: Reflection and documentation are critical in the process of making. By keeping a maker journal, you will hone reflective thinking skills that are necessary to pursue a self-directed learning and explore different ways of documenting your learning and making processes effectively. You will reflect and document your learning and making processes throughout the 7 weeks. Keep a journal in a format of your choice (e.g., notebook, blog/google doc, audio/video journals, drawing, etc.). There is no template for this personal journal, although you can find some guidance/prompt questions below. You can update the journal as often as you want, but at least once a week, and you will submit your journal each week. Depending on your choice of the format, it could be a link to your online journal (blog, google doc, video/audio files) or a picture of (or scanned image of) your handwritten journals.

To facilitate your reflection, feel free to use and adapt the following prompts (although you do not need to be limited to the prompts). You might also find the Mindful Maker Questions available at

<http://www.mindfulmakerquestions.info> helpful.

- a. First Week Prompt: To identify your project, you might consider the following questions:
- What is your project vision? What are you hoping to do?
 - What inspired you to pick this project? Why are you doing it?
 - Do you know of other people who have done projects that are similar, or is this one-of-a-kind?
 - What other project ideas have you toyed with?
 - What kinds of projects have you built in the past?
 - What do you think the hard parts are going to be? What are the easier parts?
- (source: Makerspace Playbook School Edition (p. 24))

Also, consider whether the project is achievable in 6-7 weeks, what resources you need to complete it, and where you can obtain them.

- b. Weekly Prompts throughout the 6 weeks
- What did you do/make this week?
 - How did you feel?
 - What did you like?
 - What did you not like?
 - What is the biggest thing you learned this week?

c. Mid-term Prompts

- You may want to review your initial goals you set up in the first week.
- How are you doing meeting your goals?
- Have your goals changed? If so, why and what are your new goals?
- What did you do well and what will you do differently for the rest of the time?

d. Last Week Prompts

- What are the biggest things you are taking away from this assignment?
- What was your experience of sharing your project with others (virtually) like?
- How have you changed?
- How might this experience help you in the future?

Project sharing. You will share your projects in class on 10/16

Your Making project will be reviewed on the basis of:

1. Process: Is the student fully engaged? Do they consistently display willingness to try multiple solutions and iterative processes, leading to a deeper, more distinctive project over time? (based on evidence from the maker journals)
2. Understanding/Learning: Does the project demonstrate a mastery of skills and reflect a deep understanding of concepts and materials?
3. Product: Is the project complete and impeccable? Does it express the student's idea in a unique way?

Also, your project can also be reviewed and reflected upon based on the Learning Dimensions Framework constructs and indicators:

LEARNING DIMENSIONS

of Making and Tinkering

Valuable learning experiences can be gained through making and tinkering.

Use this framework to notice, support, document, and reflect on how your tinkering environment, activities, and facilitation may have supported or impeded such outcomes.



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exploratorium the tinkering studio RESEARCH + PRACTICE COLLABORATORY

Source: <https://www.exploratorium.edu/tinkering/our-work/learning-dimensions-making-and-tinkering>

4. Design Thinking for Librarians

Required Readings and Viewing: Review the following resources as you work on the project.

- Design Thinking for libraries
 - Design Thinking for libraries toolkit
 - Design Thinking in a day: an at-a-glance guide for advancing your library
 - Design thinking for libraries activities workbook.
 All 3 are downloadable at: <http://designthinkingforlibraries.com>
- Library2.017 Design Thinking recordings: <http://www.library20.com/page/makerspaces-recordings>

This project includes multiple phases that guide you through the process of design thinking. You can work either individually or as a team; teamwork is strongly encouraged because collaboration is an essential part of design thinking. This project has various due dates by phase; but Design Thinking is iterative and cyclical processes (rather than a linear process) and you can always go back and edit your submissions for previous phases.

Our goal is to propose a program, service, space, system, resources, or other endeavors in a library (makerspace) that addresses a problem, need, interest, passion, or hope of community members using design thinking process.

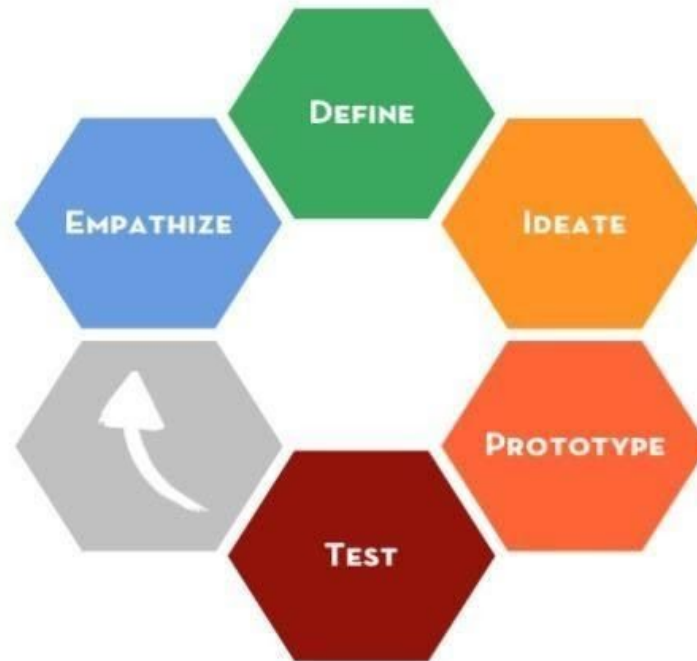


Image source: Design Thinking Process. Image © Stanford d.school.
(Referenced by Silvers in <https://designthinkingformuseums.net/2016/05/03/managing-up-design-thinking/>)

1) Empathize

Instructions. In this Empathy phase, you will learn the need and interest of a community member(s) directly and practice your skills interacting with them. Understanding what community members really want and need is critical to make a human-centered project.

Interview a community member or a group of community members; it could be in-person, or over the phone, Zoom, Skype, Google Meet, or more. Take careful notes or audio-record the conversations during the interview.

The focus of your interview should be on the person(s)' needs, interests, passion, hopes, challenges, or ideas. You might find the following questions useful. Feel free to modify the questions for your particular interviewee(s) and make sure you ask additional probing, follow-up questions as needed:

Sample questions from Youth Makerspace Playbook, p. 5, slightly modified by Dr. Koh:
http://makered.org/wp-content/uploads/2015/10/Youth-Makerspace-Playbook_FINAL.pdf

- Do you like to go to a library? What sorts of things do you like to do in a library?
- What do you enjoy doing most when you have free time?
- Is there anything that you'd really love to build, make, and/or invent?

- What are the things you see yourself good at when it comes to helping others?
- In what ways do you enjoy helping people the most?
- What are you curious about?
- What are some things you're most excited to learn or get better at?
- Is there anyone you'd like to meet or talk to?
- Is there anything that makes you nervous that you'd like more practice and help with?
- Think about your favorite space (a room in your home, school, workspace, or a space outside). Why is it your favorite? What do you like about it?
- If you could add anything to your favorite space, what would it be and why?

Submission.

In the complete final essay, you will need to report a detailed and insightful discussion on your interview and the interviewee(s)' needs. This week, however, you just need to submit a brief summary on your interview (about 200 words) on the Empathize discussion board in Moodle.

Address the followings:

1. Who did you talk to?
2. What did you learn about the person(s)' needs, interests, passion, hopes, challenges, or ideas?
3. Is there anything that surprised or inspired you?
4. Did your interview resonate any of the course readings/viewings/discussions? If so, what are they?

2) Define

Reading. Design Thinking in a Day, Chapter 1. Getting Started (pp. 4-5).

Instructions. Based on what you learned about your interviewee(s)' needs and ideas, try out several *How might we* questions that might best describe the challenge/issue your project will address.

Submission. Report the followings—1 or 2 sentences for each question—on the Define discussion board in Moodle:

1. Your target user group
2. Their biggest needs, hopes, etc.
3. Your *How Might We* questions. (about 3-5 questions, but no limit on the number of questions)

3) Ideate

Reading. Design Thinking in a Day, Chapter 3. Ideation (pp. 8-9).

Instructions. Brainstorm and come up with many ideas that potentially solve the problem you identified. If you are working as a group, you need a brainstorming session(s) together; Follow the rules in Design Thinking in a Day p. 9.

Submission.

List all the ideas you came up with this week and indicate the *How Might We* questions you are addressing.

4) Prototype

Reading. Design Thinking in a Day, Chapter 3. Ideation (pp. 10-11).

Instructions. Select 1 or 2 ideas from the list you came up in the IDEATE phase. Visualize your idea, create a craft or digital mock-up, or act out a role-play. Be ready to share and exchange feedback on your prototypes in class.

Prototype presentation in class must include:

- (1) Title of your project
- (2) Your prototype itself
- (3) Explain your target user, challenge/need, and a How Might We question your prototype is addressing in a couple sentences
- (4) Briefly state how your solution might reflect (or unable to reflect) which foundational principles/concepts of librarianship, the maker movement, or Design Thinking characteristics.
- (5) After the class, write a brief reflection on how the prototype worked (about 200 words). Did it work well or not? How and why? What was it like sharing your prototype with other people? What feedback did you get? How would you change your solution/ideas?

5) The final essay on the process of your design thinking

Write up on the design thinking process; discuss all phases you have gone through, as well as the final product. Discuss how the fundamentals of librarianship, the characteristics of the maker movement, and Design Thinking informed your problem-solving or design solutions. Cite relevant professional/scholarly literature.

You may use the narrative structure suggested in Design Thinking in a Day (p. 16), but feel free to modify the structure to make it your own storytelling. The essay should be approximately 2,000-3,000 words. Make sure you have a title of your project.

Review criteria for the essay include:

- Adherence to the instructions above
- Evidence of understanding how to design a library project using design thinking
- Evidence of understanding how to link a library project with the intended audience and their needs and interests
- Evidence of understanding how to design a library project based on the foundational concepts and principles of librarianship
- Potential of the project to allow community members to be engaged and empowered
- Interest and insight displayed in your essay
- Readability and organization of your essay
- Quality of your reference list; correctness of your citations

- Quality of your writing (i.e., no or little grammar or spelling errors and no or little awkward sentences or word choices)