Design Thinking: Human-Centered Approaches to Making the World

Summer Session 2, 2018: June 11 to July 13
Monday through Friday, 3PM to 4:45PM
Room TBD

Instructor
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Office hours by appointment

Teaching Assistant
TBD

Course Description
This course provides an overview of approaches to design thinking: a process of identifying, creating, and implementing solutions. Through an experiential approach, students learn methods for understanding users' needs, synthesizing complex information, identifying directives for design, generating ideas, prototyping, and communicating solutions. Methodologies will reflect multiple areas, including design, engineering, business, and anthropology. The class operates collaboratively tackling a locally relevant problem, such as active transportation or waste management. Students also explore the role of this process in business, organizations promoting social change, and education through readings, case studies, lectures, guest speakers, discussion, and written exercises. No previous experience in design is required.

Objectives & Outcomes
The objective for this course is to expose students to design thinking as a process for approaching problems and generating opportunities. This is course is primarily based in process. Students will be asked to reflect on their creative processes, methods, and perceptions of engaging in a team challenge.

“Design thinking is scalable and can be applied incrementally to improve existing ideas (such as how a service is delivered or how a product performs for the user) or it can be applied radically to create disruptive solutions that meet the needs of people in entirely new ways.”
- Tim Brown (Why Social Innovators Need Design Thinking, 2011)

Principles of design thinking include:
● “doing rather than thinking”: a bias towards action
● failing forward fast through low resolution-prototyping
● people-focused: lead with the user
● iterative approach
● collaborating across disciplines
● ideas are not precious; there is no right answer

Design thinking is not one process, but a collection of approaches and methods that are used to solve “wicked problems”. Students will be exposed to a variety of tools, techniques, and approaches that can be applied through the design thinking process:
● Discovery
● Synthesis
● Ideation
● Prototyping
● Evaluation

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Method & Organization

This course will use an experiential approach, where students will apply the course content (i.e., the techniques, approaches, and skills covered through lectures, reading, and discussion) to a real world project which the class will approach as a studio team. Students will be expected to contribute to the project through individual assignments and team activities.

A successful student will demonstrate application of the course content, a willingness to push themselves and their creative boundaries, an inquisitive approach, and a participatory and collaborative mindset.

Each day, we will begin with a brief lecture or presentation. The second half of class will be spent introducing the next step in the project, and working as a large group, in small groups, or independently on a specific element of the project. This course will involve meeting with individuals outside of the course, traveling on some field trips, and sharing work with reviewers and receiving feedback.

Expectations & Craft

Jon Kolko says:

"Based on my experience reviewing portfolios from recent business school graduates, I would argue that one of the most fundamental failings of "design thinking" education is the lack of craftsmanship. Students don't appear to learn a honed, tacit, and careful "innate" sensibility for making, and simultaneously, they don't appear to have developed an intimate understanding of the medium they are responsible for shaping. Instead, they are equipped with a toolkit of methods."

This course does not teach traditional formal design. We will not explore the depth and complexity of graphic, product, or interaction design. We will, however, have high expectations for craft and quality in the work that we take on. I recommend you read Kolko’s essay on craftsmanship. We will expect to see you practicing and improving on the execution of the principles of design thinking outlined above.

Additionally, we will expect high-quality craft in your assignments, team project, presentations, and written work. The craft and quality of this work, in addition to its content, will be graded. This includes attention to detail, spelling, and consistency. It is evident when you put the time into creating your work.

Tools & Resources

There are no textbooks for this course. All readings and videos will be available online for students to access and review. However, technology, including access to a computer will be required for this course. Access to a laptop during class time is preferred. Each team will likely need a laptop to work together during course time.

The following tools and resources are recommended but not required:

- Laptop computer (for use during group work times)
- Camera (or smartphone) with video capability
- Visualization software
  - Adobe Creative Cloud - Illustrator, Photoshop, Indesign
  - OmniGraffle - standalone software if you don’t want to pay the subscription to Adobe CC
  - Grafio for iOS
  - Microsoft Office - PowerPoint or Word, with some creativity and finagling, can be used to complete exercises.
  - Apple iWork - Keynote or Pages, same as Microsoft Office.
- Video editing software (optional)
- Group communication tools
  - Doodle - Scheduling and polling
  - Google Drive - Cloud-based document creation, sharing, and editing.
• Slack - Free team communication tool that integrates with most other tools.
• Dropbox - File syncing service that supports comments and editing Microsoft Office documents.
• BoardThing - Remote brainstorming tool
• Hackpad - A fun alternative to Google Documents that supports task lists and collaborative editing

Assignments and Course Schedule
Detailed assignments, readings, and course schedule are available here. Schedule will be periodically updated. Please review regularly for updates. Assignments should be uploaded to Blackboard by the start of the class in which they are due, unless otherwise indicated.

Late Assignments
Assignments are due at the beginning of class on the date listed, uploaded to Blackboard. Late assignments will be penalized by no less than one letter grade per day the assignment is late.

Incomplete Assignments
No incomplete will be considered unless warranted by external circumstances.

Extenuating Circumstances
If circumstances prevent you from completing your assignments in a timely fashion, please discuss with Liz as soon as possible.

Class Project
The entire class will be based around a single project, selected by the instructor. The project descriptions will be available at the beginning of class. Time will be spent in class working on the project, although additional time will be required outside of class.

Team Expectations
For the course project, you will work with a team, assigned by the faculty. Within your team, it is recommended that you establish expectations, norms, roles, and tools. A shared calendar may be beneficial, or a texting service such as GroupMe or WhatsApp. Your whole team does not need to participate in every activity, but all team members are expected to contribute to the project. Peer evaluations will be considered in the final grades.

If you experience any challenges with your team or teamwork, please reach out to the faculty for support and guidance.

Grading
Students will be graded on three main areas: assignments, project work, and participation. All homework assignments and written reflections will be completed independently. Students will complete most project work with their team, including the final presentation. A percentage breakdown is indicated below.

The following standards will be used in assigning grades:

A Exemplary work, which is attended with initiative beyond the description of the stated problem. Work which makes evident a significant understanding of the problem, shows competence in the required skills, and exhibits a conceptual clarity and depth. Is attended by an attitude of exploration, of open-mindedness, and a willingness to benefit from criticism.

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B Some exemplary work which shows an understanding of the problem, displays a conceptual foundation and is well crafted. Shows competence and mastery of skills. Is attended with an open and inquisitive attitude.

C Adequate work which meets the minimum requirements of the problem and course. Shows an understanding of the problem while acknowledging some deficiencies. Shows a reasonable mastery of skills and concepts. This grade is seen to represent the average solution and therefore will be the most prevalent.

D Work, which although complete, does not show an understanding of the problem, and demonstrates deficiencies in the mastery of skills. This work can often be attended with a belligerent or close-minded attitude particularly with respect to criticism and self-motivation.

F Failing work which does not meet the requirements of the problem or course, shows a serious deficiency in the mastery of skills.

No incomplete will be considered unless warranted by external circumstances.

Grade Breakdown

Individual Assignments 25%
1. Three examples of design
2. Mind map of topic area
3. Secondary research: News Articles
4. Secondary research: Customer Behavior or Reports
5. Research debriefs
6. Midpoint peer evaluations
7. Individual idea generation
8. Final peer evaluation

Team Project Work 50%
1. Research Summary
2. Synthesis Report
3. Prototyping & User Feedback Report
4. Final Presentation

Reflections (4) 15%
1. Research
2. Synthesis
3. Prototyping
4. Entire process

Participation 10%

Attendance Policy
Participation in the design process requires you to show up and be present. More than one unexcused absence will result in a half-letter drop of grade.

Academic Integrity
This course follows the Undergraduate Student Academic Integrity Policy. Please review it here: http://www.wustl.edu/policies/undergraduate-academic-integrity.html.
Design is a process of remixing and borrowing. We expect citation of all references throughout your design process. If you have questions related to plagiarism or citations, please discuss with the course instructor.

Accommodations and Services
Washington University is committed to providing accommodations and/or services to students with documented disabilities. Students who are seeking support for a disability or a suspected disability should contact Disability Resources at 935-4153. Disability Resources is responsible for approving all disability-related accommodations for WU students, and students are responsible for providing faculty members with formal documentation of their approved accommodations at least two weeks prior to using those accommodations. I will accept Disability Resources VISA forms by email and personal delivery. If you have already been approved for accommodations, I request that you provide me with a copy of your VISA within the first week of class. As this course is primarily based on group work and individual assignments, please let me know if you have concerns about completing the requirements.

Schedule
This schedule is subject to change, which will be announced in class. The Google Doc version of the syllabus will be updated to reflect changes.

### Introduction & Scoping

<table>
<thead>
<tr>
<th>In Class</th>
<th>Homework Due</th>
<th>Reading</th>
<th>Team Project</th>
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</table>
| M 6/11   | ● Introduction to Design  
● Mini-Project | | Brown, Tim. “Design Thinking”  
The Deep Dive (20 minute video) |
| T 6/12   | ● Project Introduction  
● Introduction to Critique  
● Share Examples of Design | Individual Assignment 1: Three Examples of Design | Kelley, David, and Tom Kelley. “Reclaiming Your Creative Confidence.” |
| W 6/13   | ● Share Mind Maps  
● Drawing  
● Introduction to Research  
● Assign teams | Individual Assignment 2: Mind Map | |

### Research

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<tr>
<th>In Class</th>
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| Th 6/15  | ● Research methods  
● Research planning  
Johnson, Steven. “Understanding Human behavior: taking a more complex approach.” | Prepare for research |
| F 6/16   | ● Research planning  
● Interview practice  
● Review discussion guides  
● Debriefing research | Individual Assignment 4: Secondary Research // Customer Behavior or Reports | Ross, Jim. “Why are contextual inquiries so difficult?”  
Kolko, Jon. “Methods for Conducting Research and Gaining Empathy: Contextual Inquiry.” | Prepare for research |
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<th>Reading</th>
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<tbody>
<tr>
<td>M 6/18</td>
<td>● In the field!</td>
<td></td>
<td>Fieldwork Debriefs</td>
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<tr>
<td>T 6/19</td>
<td>● In the field!</td>
<td></td>
<td>Fieldwork Debriefs</td>
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<td>Synthesis8</td>
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<td>In Class</td>
<td>Homework Due</td>
<td>Reading</td>
<td>Team Project</td>
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<tr>
<td></td>
<td>● In the field!</td>
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<tr>
<td>Fr 6/22</td>
<td>● Synthesis methods</td>
<td>Kolko, Jon. “How Do You Transform Good Research Into Great Innovations?”</td>
<td>Fieldwork Debriefs Synthesis Prepare research summary</td>
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<td>● Team debrief &amp; synthesis</td>
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<td></td>
<td>● In the field!</td>
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<tr>
<td>M 6/25</td>
<td>● Introduction to ideation</td>
<td>Reflection 1: Research</td>
<td>Synthesis Prepare research summary</td>
<td>Synthesis</td>
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<td>● Team debrief &amp; synthesis</td>
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<td></td>
<td>● Share research summary</td>
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<td></td>
<td>● Presentations</td>
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<td>T 6/26</td>
<td>● Reviewing HMW questions</td>
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<td>Project 1: Research Summary Presentation</td>
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<tr>
<td></td>
<td>● Introduction to Prototyping</td>
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<td></td>
<td>● Prototyping</td>
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<td></td>
<td>● Prepare for user</td>
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**Prototyping**

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<th>Date</th>
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<th>Homework Due</th>
<th>Reading</th>
<th>Team Project</th>
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<tbody>
<tr>
<td></td>
<td>● Prototyping plan</td>
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<tr>
<td>F 6/29</td>
<td>● Evaluative research and user testing</td>
<td>Reflection 2: Synthesis</td>
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<td>Prepare synthesis report</td>
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<td>● Prototyping with team</td>
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<td>Prototyping</td>
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<td>M 7/2</td>
<td>● Prototyping with team</td>
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<td>Project 2: Synthesis Report</td>
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<td></td>
<td>● Prepare for user</td>
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<td>Prototyping</td>
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<tr>
<th>Date</th>
<th>Activity</th>
<th>Reading</th>
<th>Team Project</th>
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</table>
| T 7/3 | ● Guest lecture?  
● Design in other disciplines  
● User testing  | Ahrens, Justin. “Cause Design has impacts beyond doing good: changing how you think about design.”  
Design for People, Not for Awards  
Selzer, Steve. “Human-Centered Design: Why Empathy Isn’t Everything.”  | Prototyping  
Prepare for user testing  |
| W 7/4 | NO CLASS  | responded                                                                 | Prepare for user testing               |
| Th 7/5 | ● User testing  
● Guest lecture?  | responded                                                                 | Prepare for user testing  
Prepare prototyping report               |

**Implementation and Presentation**

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<tr>
<th>Date</th>
<th>Activity</th>
<th>Reading</th>
<th>Team Project</th>
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| F 7/6 | ● Telling the story  
● Guest lecture?  
● User testing  | Reflection 3: Prototyping  
Lamar, Cyriague. “The 22 Rules of Storytelling”  | Debrief user testing  
Refine prototypes  
Prepare prototyping report               |
| M 7/9 | ● Feasibility and viability  
● User testing  | responded                                                                 | Project 3: Prototyping & User Testing Report               |
| T 7/10 | ● Work time  | responded                                                                 | Refine prototype  
Prepare final presentation               |
| W 7/11 | ● Draft presentation review  | responded                                                                 | Refine prototype  
Prepare final presentation               |
| Th 7/12 | ● Work time  | responded                                                                 | Refine prototype  
Prepare final presentation               |
| F 7/13 | ● Final presentations  | Individual Assignment 8: Final Peer Evaluation  
Reflection 4: Entire Process  
**Recommended Reading**

Required readings are available in the updated course schedule on Google drive or online. The following resources are not required, but may be useful as reference throughout the course and for further reading:


