U44 Bus 290

Design Thinking:
Human-Centered Approaches to Making the World

Summer Session 4, 2016: July 18 to August 18
Monday through Friday, 3PM to 4:45PM
282 Skinker

Instructor
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Course Description
This course provides an overview of approaches to design thinking: a process of identifying, creating, and implementing solutions to problems. Through an experiential approach, students learn methods for understanding users, synthesizing complex information, identifying directives for design, generating ideas, prototyping, and communicating solutions. Methodologies will draw from multiple areas, including design, engineering, business, and anthropology. The class operates as one studio, collaboratively tackling a locally relevant problem, such as active transportation or waste management. Students also explore perspectives on the role of this process in business, 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

**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. Early on, you will 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, and written
work. The craft and quality of this work, in addition to its content, will be graded.

Tools & Resources
Access to a computer will be required for this course. Access to a laptop during class time is
preferred.

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.
  - Murally - Remote brainstorming tool
  - BoardThing - Remote brainstorming tool
  - Asana - Project management and communication tool. You can both
assign tasks and communicate re: those tasks with your team.
  - 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. 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.

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.

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. 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 included 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 assignments will be completed independently. Students will complete most project work independently, except the final report and 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.
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%
Three examples of design
Mind map of topic area
Secondary research
Research debriefs
Peer evaluations
Idea generation

**Team Project Work**  50%
Research Summary
Synthesis Report
Prototyping & User Feedback Report
Final Presentation

**Reflections (4)**  15%
Research
Synthesis
Prototyping
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.