Fall 2018 Syllabus

4.021 Design Studio: How to Design

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Level: Undergraduate

Final Review: a final review will be held during the official final exam period

Schedule: MW 2-5  Room N52-342C   Units: 3-3-6

Class Description:

Introduces fundamental design principles as a way to demystify design and provide a basic introduction to all aspects of the design process. Through lectures and weekly exercises, students will develop their skills and enable creativity, abstract thinking, representation, iteration and design development. An introductory class intended for students without a design background geared towards enabling more effective collaboration with designers and the ability to apply the foundations of design to any discipline.

Limited to 25; preference to Course 4 and 4B majors and Design and Architecture minors, and first- and second-year students.

Studio Structure

Exercise 1

The first project explores the process of design. Each week the class will dive into one aspect of the design process from context to concepts, drawing, making, iterating, building a narrative and finally presenting. This path exemplifies a traditional design process where a designer starts with an idea and works through testing, expanding, refining and eventually realizing it. Through weekly topics and assignments, students will develop a variety of design skills relating to each stage of this path. Students will be asked to develop a concept that applies a fabrication technique or a method of making to the design of a functional screen wall. The project will start with an exercise on analog drawing, where students will develop a series of rules for the design of their screen wall. In the next stages of the project, students will use white foam in combination with various subtractive fabrication methods (wire cutting, carving, sanding, melting etc.) to test, expand and refine the initial rules, transforming them from rules for design into rules for making. Concepts should be focused on the performance of the screen – i.e. with regards to privacy, shading, views, optics, movement etc. – and its relation to the method of making.

Context >> Concept >> Draw >> Make >> Iterate >> Analysis/Narrative >> Present

Deliverables for Exercise 1:

- Drawings/Representation
- Rules/Procedures
- Physical study models
Exercise 2

The second exercise will ask students to develop their own design and fabrication processes that goes from 1D to 2D to 3D. This 1D to 3D translation is the basis of many materials and physical things around us, for example, DNA or the translation of yarns into textiles or the use of 2x4s in the construction of buildings. This discovery-based or research-oriented design process starts by making, experimenting and testing a process, then develops a concept around what it is, why it is useful and what context it relates to. By starting with 1D materials, students will develop their own strategies for folding, creasing, weaving, braiding, felting or otherwise manipulating these materials into 2D and ultimately 3D structures. This lineage allows us to explore the fundamentals of geometry from line to surface to volume as well as think about methods of drawing and constructing objects & spaces.

Make >> Draw >> Iterate >> Concept >> Context >> Analysis/Narrative >> Present

Deliverables for Exercise 2:

- Prototype models
- Drawings
- Final Object/s
- Narrative/Context
- Final Video
- Final Presentation

Class Schedule

Exercise 1: (8 Weeks) The Design Process

Week 1 (Sept. 5) Introduction
★ 9/5 Exercise Introduction / Context Introduction, Abstract Series & Drawings

Week 2 (Sept. 10) Drawings
★ 9/10 Studio / Desk Crits – Review 1st Drawing
★ 9/12 Studio / Drawing Presentations

Week 3 (Sept. 17) Context & Concept
★ 9/17 Concept & Context Intro
★ 9/19 Studio / Weekly Presentations + Desk Crits

Week 4 (Sept. 24) Representation & Fabrication
★ Intro to fabrication/shop trainings
★ Intro Rhino/Adobe
9/24 Studio / Representation Intro + Desk Crits
9/26 Studio / Weekly Presentations + Desk Crits

Week 5 (Oct. 1) Make
★ 10/1 Studio / Fabrication Intro
★ 10/3 Exercise 1 Interim Review

Week 6 (Oct. 8) Iterate
★ 10/8 No Class - Holiday
★ 10/10 Studio / Weekly Presentations + Desk Crits

Week 7 (Oct. 15) Analysis/Narrative/Documentation
★ 10/15 Studio / Narrative Intro + Desk Crits
★ 10/17 Studio Weekly Presentations + Desk Crits

Week 8 (Oct. 22) Presentation
★ 10/22 Studio / Desk Crits
★ 10/24 Exercise 1 Final Critique

Exercise 2: (8 Weeks) Designing a Process

Week 9 (Oct. 29) Intro
★ 10/29 Studio / Introduction
★ 10/31 Studio / Desk Crits

Week 10 (Nov. 5) Make
★ 11/5 Studio / Make Desk Crits
★ 11/7 Studio / Make Desk Crits

Week 11 (Nov. 12) Draw
★ 11/12 No Class – Veterans Day
★ 11/14 Studio / Draw Desk Crits

Week 12 (Nov. 19) Iterate
★ 11/19 Studio / Iterate Desk Crits
★ 11/21 Studio / Iterate Desk Crits

Week 13 (Nov. 26) Concept
★ 11/26 Studio / Concept Desk Crits
★ 11/28 Exercise 2 Interim Review

Week 14 (Dec. 3) Context
★ 12/3 Studio /Context Desk Crits
★ 12/5 Studio /Context Desk Crits
Week 15 (Dec. 10) Analysis/Narrative

- 12/10 Studio / Context Desk Crits
- 12/12 (Last Day of Classes) Studio / Narrative Desk Crits

Week 16 (Dec. 17) Presentation

- 12/17 Prepare Presentations
- 12/19 Exercise 2 Final Critique

Absence Policy

Attendance: Attendance for the full duration of each class is mandatory. The studio is an exceptional learning environment that requires your physical presence as well as your intellectual presence. You are allowed three excused absences for the semester. An excused absence is defined as one that was discussed with and approved by the professor at least 24 hours prior to the date of absence, or a family or medical emergency that is confirmed by your physician or a dean in Student Support Services. Absences beyond the three allotted will result in a decrease in your final grade. If you miss six or more studio classes, you will be asked to drop the subject or receive a failing grade.

Evaluation Criteria

Evaluation Criteria and Grading: The following criteria will be used for the evaluation of student’s work, both in terms of helping their progress and in final grading. (01) Concept: How clearly is the student articulating the conceptual intentions? (02) Translation of Concept: How well is the student using their concept to develop a design response to given problems? (03) Representation Appropriateness: How well matched is their choice of representational means to their intentions? (04) Representation Quality: How accomplished are they with drawing, modeling, digital representation, etc? To what degree does their representations convey what they ought to? (05) Oral Presentation Skills: How clearly are they presenting their ideas orally, whether at their desk, in class discussions, or to a more formal jury? (06) Participation in Discussions: How actively and how constructively are they involved in class discussions, both formally and informally? (07) Response to Criticism: How do they effectively take advantage of criticism from instructors, classmates and outside jurors? (08) Auto-Critical Skills: To what Completion Requirements

A: Excellent — Project surpasses expectations in terms of inventiveness, appropriateness, verbal and visual ability, conceptual rigor, craft, and personal development. Student pursues concepts and techniques above and beyond what is discussed in class.
B: Above Average — Project is thorough, well researched, diligently pursued, and successfully completed. Student pursues ideas and suggestions presented in class and puts in effort to resolve required projects. Project is complete on all levels and demonstrates potential for excellence.
C: Average — Project meets the minimum requirements. Suggestions made in class are not pursued with dedication or rigor. Project is incomplete in one or more areas.
D: Poor — Project is incomplete. Basic skills including graphic skills, model-making skills, verbal clarity or logic of presentation are not level-appropriate. Student does not demonstrate the required design skill and knowledge base.
F: Failure — Project is unresolved. Minimum objectives are not met. Performance is not acceptable. This grade will be assigned when you have excessive unexcused absences.
Completion Requirements

Completion of each of the exercises, rigor in process and clarity in representation, as well as the overall progress of the semester (including attendance) will be fundamental to completing the course.

Textbooks and Reading Sources

None