

MIT Architecture, SA+P

Arch 4.110 Design Across Scales: Design as a Humanist Discipline

Spring 2022 | M 10:00 – 12:00 | 7-429 (Long Lounge) | W 07:00 – 09:00 | 1-273, 1-371, 1-375, 1-379

Instructors: Jessica Helfand & Rania Kaadan



Ultimately all problems of design merge into one great problem: design for life.
Gyorgy Kepes, 1947

Design Across Scales

Spring 2022

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Today, design is not a single discipline, but a function of multiple perspectives and practices that collectively help us better understand—and ideally address—some of the world’s greatest challenges. All of this obliges us to ask serious questions about the things we put out into the world. How do we approach making things for people whose lives are shaped by conditions that predate—and all too often restrict—our participation? What happens when the things we produce result in unintended consequences? Who is design *for*—and why should we care?

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Now more than ever, these operational, cognitive, and creative challenges demand a robust and interdisciplinary skill set, one that benefits from new voices and expanded vocabularies, urging us to examine not only our own inventions but their impact on the people we serve. We begin this work by inviting a host of perspectives helping us revise and examine urgent matters. Where do science and the visual imagination converge? How does measurement restrict our social freedom, limiting our personal agency, our expressions of selfhood? What does it mean to design for a future we can't possibly see?

From more inclusive research methodologies to a more nuanced appreciation for unfamiliar narratives, these dialectics oblige us to widen the lens, to acquire new and comparatively radical skills as makers but also as citizens, as critics but equally as conservators of a cultural legacy to which we can, indeed *must* all claim authorship. What is ableism, and why does it matter? How is legibility a racial as well as a spatial conceit? And why is scale so tethered to functions of magnitude, rather than seen as a form of justice?

These are serious questions that demand reflection. With a weekly class, visiting lecturers, and regular (weekly) group lab sessions, we will interrogate our assumptions about how design operates across a range of frequencies—from micro to macro, the atomic to the astronomical—as we ask ourselves what design and scale mean for everyone.

Course Information

Credit Hours: 2-0-10 U (Lecture)

Lecture Schedule:

Monday 10:00 – 12:00 AM in 7-429 (Long Lounge)

Studio Schedule:

Wednesday 7:00 – 9:00 PM (2 sections) in 1-273, 1-371, 1-375, 1-379.

TA Office Hours + Skills Support

TBD

Teaching Assistants:

Christopher Hassan Allen	allench@mit.edu
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TAs' list for course-related questions: das_teaching_assistants@mit.edu

Useful Links

[Zoom](#)

[Miro](#)

Slack Channel [#ug-design-das](#)

Part One: Heart

Class 01

Jan 31 Introduction to Design Across Scales

Design Problems

- Exercise 1: Mind as Blueprint
- Exercise 2: News as Narrative
- Exercise 3: Play as Process
- Exercise 4: City as Theatre

Class 02

Feb 07 Evidence of Things Unseen: The Scale of Humanism

How the things we make reflect who we are, and how we are perceived by others.

Project 01: Due February 22: Mind as Blueprint

Class 03

Feb 14 Investigating Normal: The Scale of Mobility

On access, context, and the complexity of human perception.

Part Two: Mind

Class 04

Feb 22 (Tues) The Speculative Present: The Scale of Biomedical Futures

When science meets storytelling—and where the imagination goes when we think across disciplines.

Project 02: Due March 14 News as Narrative

Class 05

Feb 28 Measure for Measure: The Scale of Understanding

An emotional and psychological study in seeing.

Class 06

Mar 07 In The Light of the Shadow: The Scale of Hope

Alternative methods of observation: a conversation about close looking.

Part Three: Hand

Class 07

Mar 14: **Make it Yourself : The Scale of Programmable Materials**
A bold vision for harnessing the intelligence embedded in the material world.

Project 03: Due April 04 Play as Process

Mar 21: **No Class**

Class 08

Mar 28 **Make it Bigger: The Scale of the City**
Typographic legibility and the built environment.

Class 09

Apr 04: **Make it Smaller: The Scale of The Country**
Sculpture, Miniaturization, and a nationalist agenda.

Project 04: Due May 09 City as Theatre

Part Four: Synthesis

Class 10

Apr 11 **Restorative Futures: The Scale of the World**
The Art—and science—of biomimicry.

Class 11

Apr 24 **Collaborative (Ad)Ventures: The Scale of Interpretation**
Rethinking the canonical.

Class 12

May 02 **Impact Thinking: The Scale of Human Responses**
Embracing the sensory—and the sustainable.

Class 13

May 09 **Final reviews**

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.

Evaluation Criteria and Grading: The following criteria will be used for the evaluation of students' 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 regards to writing, 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 extent are they able to critique their own work regularly and effectively? (09) Attendance –see below.

- 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.
- E. Failure - Project is unresolved. Minimum objectives are not met. Performance is not acceptable. This grade will be assigned when you have excessive unexcused absences.

Seminar/Studio Culture: Work will build sequentially. Therefore, your commitment to continual development on a daily basis is of paramount importance. Through physical and virtual connections, we want to emphasize the importance of your peers as a source of support, inspiration, and feedback. Magnification of your development as a designer is made possible by the collective nature of the class. Group reviews are collective for a reason, as each of you has something to gain from your peers. Our studio is a place for all, and it necessitates the careful attention to the needs of everyone in it. There will be several platforms integrated into the class to support collectivity and document your progress. The Design Across Scales Slack channel will be an asset to confer with your peers and crowdsource for answers and support. TAs will hold in-person office hours outside of the listed class time. Incremental assignment presentations will be uploaded to a shared Miro board so you can refer back to your peers' work throughout the semester.

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Attendance: Attendance for the full duration of each class is mandatory. The design studio is an exceptional learning environment that requires your presence as well as your input. 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.

Student Support Services: If you are dealing with a personal or medical issue that is impacting your ability to attend class or complete work, students should contact a dean in Student Support Services (S3). These offices are here to help you. The deans will verify your situation, provide you with support, and help you work with your professor to determine next steps. In most circumstances, students will not be excused from coursework without verification from a dean. Please visit the S3 website for contact information and more ways that they can provide support.

Academic Integrity/Honesty: Massachusetts Institute of Technology students are here because of their demonstrated intellectual ability and because of their potential to make a significant contribution to human thought and knowledge. At MIT, students will be given unusual opportunities to do research and undertake scholarship that will advance knowledge in different fields of study. Students will also face many challenges. It is important for MIT students to become familiar with the Institute's policies regarding academic integrity, which is available at [Academic Integrity at MIT: A Handbook for Students](#).