

2025

MIT

**Architecture,
Art, & Design
Undergraduate
Programs**

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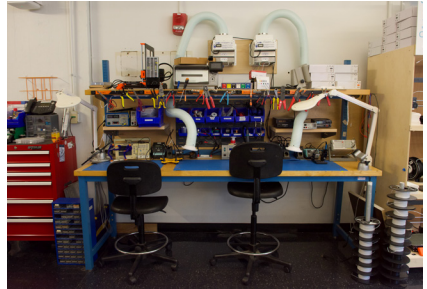
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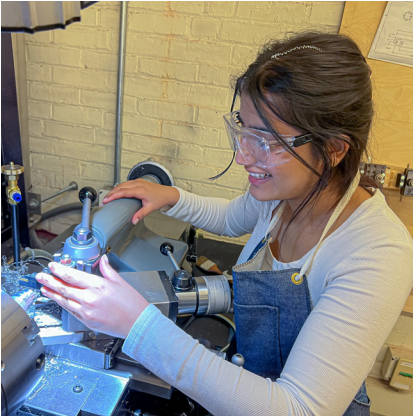
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MIT Architecture Undergraduate Programs

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DesignPlus 1st Yr. Advising Seminar

4.A02, 3 Units, Fall

DesignPlus helps first-year students learn the design process, connect with design-oriented peers and faculty, and learn about ways to build design into the rest of their MIT education, regardless of major. The academic program is flexible to account for diverse student interests within the field of design, and students will work with advisors to select a mix of academic and experiential opportunities.

DesignPlus students have 24/7 access to machines, shops, workspaces, a lounge, and kitchen. Two full-time technical staff monitor and maintain the DesignPlus work spaces and serve as a design and fabrication resource/instructor for students using DesignPlus tools and machines. DesignPlus students are encouraged to work on both class related projects and personal projects.

Majors and Minors at MIT

When you apply to MIT, you apply to the entire university, not to a specific major or school. All first-year students begin MIT with an undeclared major. During freshman year, MIT will provide academic fairs, lectures, seminars, exploratory classes, and other programs to help students determine which major will suit them best; they then are free to choose from MIT's majors, without any additional requirements or admission procedures.

MIT offers a total of 53 major and 58 minor programs. Choosing a major is an important decision and is not necessarily the same as choosing a career, but for many students, their undergraduate major choice leads directly to a specific field and/or career. MIT is an interdisciplinary institution with a wealth of ongoing cross-departmental research.

Students declare their majors prior to their sophomore year, though most students do so by the end of freshman year. Data on how many students choose each major is available from the MIT Registrar's Office. Approximately 15 percent of students choose to double major; students may also choose up to two minors. Students who successfully complete a minor program will have the field of study specified on their student transcript, thus giving recognition of focused work in the discipline.

Introductory Subjects

4.02A Design Studio: How to Design Intensive

IAP, 9 units, HASS-A

This class is for students who are intending to major or minor in architecture or design. It is the first in a series of required design studios that Introduces fundamental design principles and combines hands-on practice with design theory. The class meets daily for three weeks during IAP and students receive HASS-A credit. 4.02A content is the equivalent of 4.021 offered during Fall and Spring terms.

4.021 Design Studio: How to Design

Fall & Spring, 12 units, HASS-A, Skylar Tibbits & Paul Pettigrew

This class is for students who are intending to major or minor in architecture or design. It is the first in a series of required design studios that Introduces fundamental design principles and combines hands-on practice with design theory. Develops students' ability to apply the foundations of design to any discipline. 4.021 students receive HASS-A credit.

4.053 Visual Communication Fundamentals

Fall, 12 units, HASS-A, Bo-Won Keum

Provides an introduction to visual communication, emphasizing the development of a visual and verbal vocabulary through the lens of typography. Presents the fundamentals of shape, composition, visual hierarchy, word/image relationships, and type systems as building blocks for communicating with clarity, emotion, and meaning. Students develop their ability to analyze, discuss, and critique both their work and the work of the designed world, with an emphasis on type as a visual and conceptual medium. 4.053 students receive HASS-A credit

4.110 Design Across Scales and Disciplines

Spring, 12 units, HASS-A, Nicholas de Monchaux

This subject explores the reciprocal relationship between design, science, and technology. It covers a wide range of topics, such as industrial design, architecture, visualization/perception, design computation, material ecology, environmental design and environmental sustainability. Students examine how transformations in science and technology have influenced design thinking and vice versa, and develop methodologies for design research by collaboration on design solutions to interdisciplinary problems. 4.110 students receive HASS-A credit.

4.302 Foundations in Art, Design, and Spatial Practices

Spring, HASS-A, CI-M, 12 units, preq., 4.02A or 4.021

Offers a foundation in artistic practice and its critical analysis. Emphasizes the development of artistic approaches and methods and their analogies to architectural thinking and design practice. Develops skills in how to communicate ideas and experiences through two-dimensional, three-dimensional, time-based media, and through new genres. This includes engaging in spatial, sculptural, performative and process-oriented artistic methods. Video screenings, guest lectures, visiting artist presentations, field trips, and readings supplement studio practice. Instruction and practice in written and oral communication provided. Lab fee. Preference to Course 4 and 4B majors.

4.605 A Global History of Architecture

Spring, 12 units, HASS-A, Mark Jarzombek

This popular introductory class is a survey on the history of architecture and urbanism from Ancient Egypt to the present. The course satisfies one of the required classes for the major in Course 4, the HASS-A requirement, and provides a solid background for other classes in architecture history.

4.657 Design: The History of Making Things

Spring, 12 Units, HASS-A, CI-H, Kristel Smentek

The class examines themes in the history of design, with emphasis on Euro-American theory and practice in their global contexts. It addresses the historical design of communications, objects, and environments as meaningful processes of decision-making, adaptation, and innovation. It critically assesses the dynamic interaction of design with politics, economics, technology, and culture in the past and at present. Questions the class will pose include: How have processes and products of design been shaped by new technological possibilities? How have constraints, whether material, legislative, or aesthetic, impacted design? What role has design played in globalizing capitalist consumer desire, and how, in turn, has it been mobilized in the service of alternative economic and political systems? What are the ethics of design in the age of inequality and environmental crisis? Finally, how have the meanings we assign to design been mediated by magazines, exhibitions, corporate communication, glossy design monographs, and advertising?

Course 4 and 4B Majors

The Department of Architecture offers two undergraduate majors providing a deep and broad education in the fields of architecture, art and design. Course 4 leads to the Bachelor of Science in Architecture (BSA), and Course 4B leads to the Bachelor of Science in Art and Design (BSAD).

Situated in MIT's rich and intense educational environment, the program emphasizes the interconnected relationship between architecture, design, building technology, computation, and history, theory and criticism of architecture, art and design. The Department's extensive offerings reflect the program's commitment to the cultural, social, political, technological and ecological issues of the built environment, and the teaching of art and design not just as a means to an end, but as a form of knowledge and creative practice. Committed to a rigorous and interdisciplinary approach, both programs challenge our students to be creative, innovative, and responsible leaders in the field.

The curriculum for both the BSA and BSAD are structured to teach essential basics in multiple disciplines and provide flexibility for exploration. The range of studios, lectures, workshops and seminars provides an active learning environment in which individual creativity and criticality can be nurtured. The programs are continually evolving to engage new ways of thinking about architecture, art and design.

Approximately 250 students register in the department each year, of whom about 30 are undergraduate majors and 60 are undergraduate minors. The Department offers over 100 courses annually (graduate and undergraduate) taught by a faculty of 70.

Bachelor of Science in Architecture (BSA)

The Bachelor of Science in Architecture (BSA) degree is granted once all 17 General Institute Requirements & all 192 units of Department requirements have been completed.

Architecture majors take the following subjects during their freshman, sophomore &/or junior years.

- 4.021 Design Studio: How to Design (FA&SP, 12 units, HASS-A) or
4.02A Design Studio: How to Design Intensive (IAP, 9 units, HASS-A)
- 4.022 Design Studio: Introduction to Design Techniques & Technologies (SP, 12 units, preq., 4.021 or 4.02A)
- 4.023 Architecture Design Studio 1 (FA, 24 units, CI-M, preq., 4.022)
- 4.024 Architecture Design Studio 2 (SP, 24 units, preq., 4.023, 4.401, 4.500)
- 4.302 Foundations in Art, Design & Spatial Practices (SP, 12 units, HASS-A, CI-M, preq., 4.021 or 4.02A)
- 4.401 Environmental Technologies in Buildings (FA, 12 units, REST)
- 4.440J Intro. to Structural Design (SP, 12 units, LAB, preq: 18.02)
- 4.500 Design Computing: Art, Objects and Space (FA, 12 units)
- 4.603 Understanding Modern Architecture, (FA, 12 units, HASS-A)

In their senior year, students take the following subjects:

- 4.THT Thesis Research Design Seminar (FA, 12 units, CI-M)
- 4.THU Undergraduate Thesis (SP, 12 units, preq. 4.THT)
- 2 Restricted Electives from the lists below

Restricted Electives

Architectural Design Studies

- 4.041 Design Studio: Advanced Product Design (SP, 12 units)
- 4.053 Visual Communications Fundamentals (FA, 12 units, HASS-A)
- 4.250J Intro. to Urban Design & Development (SP, 12 units)

Building Technology (BT)

- 4.432 Modeling Urban Energy Flows for Sustainable Cities & Neighborhoods (SP, 12 units)
- 4.451 Computational Structural Design and Optimization (FA, 12 units)

Restricted Electives

Art, Culture and Technology (ACT)

- 4.307 Art, Architecture and Urbanism in Dialogue (FA, 12 units, HASS-A)
- 4.314 Advanced Workshop in Artistic Practice & Transdisciplinary Research (FA, 12 units, HASS-A)
- 4.322 Introduction to Three-Dimensional Art Work (FA, 12 units, HASS-A)
- 4.341 Introduction to Photography & Related Media (FA & SP, 12 units, HASS-A)
- 4.344 Advanced Photography & Related Media (FA, 12 units, HASS-A)
- 4.354 Introduction to Video and Related Media (FA, 12 units, HASS-A)
- 4.356 Cinematic Migrations (FA, 12 units, HASS-A)
- 4.368 Studio Seminar in Public Art/Public Space (SP, 12 units, HASS-A)
- 4.373 Advanced Projects in Art, Culture, & Technology (FA, 12 units, HASS-A)

Computation

- 4.501 Tiny Fab: Advanced Applications in Digital Fabrication (SP, 12 units)
- 4.502 Advanced Visualization: Architecture in Motion Graphics (FA, 12 units)
- 4.507 Introduction to Building Information Modeling in Architecture (SP, 12 units)
- 4.520 Visual Computing 1 (FA, 12 units)
- CMS.405 Visual Design (FA, 12 units, HASS-H)
- CMS.631 Data Storytelling Studio (SP, 12 units, HASS-A)
- CMS.633 Digital Humanities: Topics, Techniques, & Technologies (FA, 12 units, HASS-H)
- 6.1040 Software Design (FA, 18 units)
- 6.4400 Computer Graphics (FA, 12 units)
- 6.8371 Digital & Computational Photography (FA, 12 units)
- 6.C35 Interactive Data Visualization & Society (SP, 12 units)

History, Theory, and Criticism of Architecture, Art, and Design (HTC)

- 4.601 Introduction to Art History (FA, 12 units, HASS-A)
- 4.602 Modern Art and Mass Culture (SP, 12 units, HASS-A)
- 4.605 A Global History of Architecture (SP, 12 units, HASS-A)
- 4.614 Building Islam (FA, 12 units, HASS-A)
- 4.635 Early Modern Architecture and Art (FA, 12 units, HASS-A)
- 4.636 Topics in European Medieval Architecture and Art (FA, 12 units, HASS-A)
- 4.651 Art Since 1940 (SP, 12 units, HASS-A)
- 4.657 The History of Making Things (SP, 12 units, CI-H, HASS-A)

Architecture Studios

Design studios are at the heart of architecture education, and MIT offers a broad range of studios devoted to design projects of increasing complexity.

Architecture Design majors take five studios sequentially. The maximum size of the 4.023, 4.024, and 4.025 studio sections is 12 students. The final studio (4.025) is optional and can be substituted with two subjects chosen from the list of restricted elective classes.

4.021 or 4.02A Design Studio: How to Design

Fall & Spring, 12 units, IAP, 9 units, HASS-A

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.

4.022 Design Studio: Introduction to Design Techniques and Technologies

Fall & Spring, 12 units, prereq., 4.021 or 4.021A

Introduces the tools, techniques and technologies of design across a range of projects in a studio environment. The class will explore concepts related to form, function, materials, tools, and physical environments through project-based exercises. Develops familiarity with design process, critical observation, and the translation of design concepts into digital and physical reality. Utilizing traditional and contemporary design techniques and tools, faculty across various design disciplines expose students to a unique cross-section of inquiry. Limited to 25; preference to Course 4 and 4B majors and Design and Architecture minors.

4.023 Architecture Design Studio 1

Fall, 24 units, CI-M, prereq., 4.022

The first advanced design studio provides instruction in architectural design and project development within design constraints including architectural program and site. Students engage the design process through various two-dimensional and three-dimensional media. Working directly with representational and model making techniques, students gain experience in the conceptual, formal, spatial and material aspects of architecture. Instruction and practice in oral and written communication provided. Preference is given to Course 4 Majors and Minors.

4.024 Architecture Design Studio 2

Spring 24 units, preq., 4.023, 4.401, 4.500,

The second advanced studio provides instruction in architectural design and project development with an emphasis on social, cultural, or civic programs. The studio builds upon the foundational design skills with more complex constraints and context and integrates aspects of architectural theory, building technology, and computation into the design process. Preference is given to Course 4 Majors and Minors.

4.THT Thesis Research Design Seminar

Fall 12 units, Cl-M, preq., 4.024

Designed for students writing a thesis in Architecture or Design research topics, review relevant research and scholarship, frame research questions and arguments, choose an appropriate methodology for analysis, and draft introductory and methodology sections.

4.THU Undergraduate Thesis

Spring 12 units, preq., 4.THT

Program of thesis research leading to the writing of an SB thesis. Intended for seniors.

Eligibility Requirements for Studio & Minimum Grade Requirements

Course 4 Majors take studios 4.021 - 4.THT/4.THU sequentially. Students' names must appear on the studio eligibility lists to ensure participation. This list is posted on-line prior to Registration Day. Students should notify the department degree administrators if they believe there is an error in their status.

Promotion from one studio to the next is not automatic. Grades lower than "C" will jeopardize advancement in the architecture design studio sequence. Advancement eligibility rules ensure that students who enter advanced studios are well prepared.

Transferring into Architecture

Course 4 undergraduates who enter the Department as a sophomore or first term Junior, & performing well, should not have to spend an extra semester at MIT to complete a Course 4 major.

4.021 How to Design

Skylar Tibbitts &
Emily Wissemann
M&W 2-5:00 p.m.
NS2-342C



Introduces fundamental design principles as a way to demystify design and provide a basic introduction to all aspects of the design process. Stimulates creativity, abstract thinking, representation, iteration, and design development. Equips students with skills to have more effective communication with designers, and develops their ability to apply the foundations of design to any

Through lectures and weekly exercises students develop their skills and enable creativity, abstract thinking, representation, iteration and design development.

Mirra Diane Fadel Image

4.023 Architecture Design Studio 1 Forming Feasts

Latifa Alkhayat & Cherie Abbanat
TRF 1-5:00 p.m.
7-434



In 4.023 Architecture Design Studio 1, students will study rituals of dining, culminating in a comprehensive exercise in spatial, material and programmatic design. Deconstructing the diverse forces that dining can manifest, the studio will encourage each student to embark on a design exploration that begins with the elemental consideration of food and extends to the realm of spatial design.

4.023 explores the tactile and experiential dimension of dining, offering students the opportunity to explore practices from the individual's sensory encounter to the collective communal potential of the process.

Tor Elgeddadi/Alamy Stock Photo

4.025 Architecture Design Studio 3

Cristina Parreño Alonso
TRF 1-5:00 p.m.
7-434



Set against the backdrop of the Dusky Quarry, this design studio challenges students to confront and harness the transient nature of architecture. Inspired by Heraclitus' concept that "everything flows," the curriculum illustrates the idea of buildings as fluid entities, not mere static objects. We will explore the essence of space intertwined with event, movement, and crucially, time. Students are provoked to consider the vast temporal scales of the Earth, realizing that in today's age, humans have become leading geospatial agents. Our studio emphasizes "the built" as a cycle, comparing architectural processes to titanic natural forces.

Andrew Willett Photo

4.031 Design Studio Objects & Interaction

Marcelo Coelho
T 7-9:00 p.m. & R 2-5:00 p.m.
NS2-337



This course is an overview of design as the giving of form, order, and interactivity to the objects that define our daily experience. Instruction follows the path from concept to interactive product through lectures, hands-on workshops, and studio assignments.

Topics include the analysis and critique of objects, interaction design and user experience, current dialogues in industrial and interactive design, recognition of scale vs. means, and the role of computation and technology in design. Students are provided with a foundation in prototyping skills such as carpentry, digital fabrication, electronics, coding, and interaction, enabling them to create fully functional products.

Alyssa Li Image

4.053 Visual Communication Fundamentals

Bo-Won Keum
M 7:00-10:00 p.m. & W 9-12:00 p.m.
NS2-337

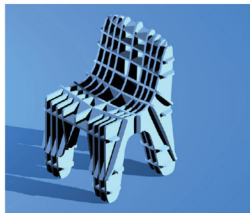


This studio course provides an introduction to visual communication, through readings, screenings, history lectures, assignments, and short exercises that draw from semiotic theory & practice. Students will become familiar with core tenets of visual communication (shape, line, composition, visual hierarchy, & typography) with particular emphasis on how signs and images are constructed.

Students also learn how to recognize, harness, & utilize graphic tools & strategies such as shifting scale, juxtaposition, editing, employing hierarchy, reordering, free-associating, & cropping, in order to communicate & develop visual ideas with clarity & precision.

4.500 Design Computation Art, Object, & Space

Larry Sass
TR 9:30-11:00 a.m.
1-150



This class will introduce course four majors, minors, and graduate students to the creative ways we use geometric modeling and output as part of design processing. We explore various foundational technologies weekly. This includes 3D Modeling, Computer Generated Rendering, and Computer-Generated Animation. Weekly design exercises, student presentations, and instructor feedback guide the application of CAD. We will work on two projects throughout the term, starting with a deep product analysis and ending with a functional, well-designed physical product - A full-scale chair. Students are expected to complete two assignments, participate in class discussions and reviews, and share their design ideas.

Bachelor of Science in Art and Design (BSAD)

The Bachelor of Science in Art and Design (BSAD) provides a rigorous but flexible program of study in which students learn fundamental principles of art and design and pursue an area of concentration across a spectrum of possibilities. The curriculum is strongly rooted in MIT's "mens et manus," or mind and hand, ethos. It offers a rigorous conceptual foundation along with strong practical skills that can be applied across diverse design domains.

In studios, students are introduced to the design process from concept to completion — through critical thinking, experimentation, and representation and physical production techniques. Studio-based learning is complemented by seminars and lecture subjects which situate design within diverse historical, cultural, social, and technological contexts. Art and design are taught as context dependent, beyond the narrow requirements of the artifacts to be designed, and as a means for interrogating the dynamics of society and culture in relation to the user.

The objective of this program is to prepare students to pursue diverse career paths in multiple areas of art and design from product design to visual communication to information design to 2D and 3D art practices and more. It enables graduates to take advantage of the many emerging design and art opportunities in industry and academia.

The degree is granted once all 17 General Institute Requirements (GIR) and departmental requirements of 180 units have been met.

Bachelor of Science in Art and Design (BSAD)

Required Design Studios (33-36 units)

- 4.021 Design Studio: How to Design (FA&SP, 12 units, HASS-A) or
4.02A Design Studio: How to Design Intensive (IAP, 9 units, HASS-A)
- 4.053 Visual Communications Fundamentals (FA, 12 units, HASS-A)
- 4.031 *Design Studio: Objects & Interaction (FA, 12 units) or
4.032 *Design Studio: Information & Visualization (SP, 12 units)

Foundation Subjects (48 units)

- 4.110 Design Across Scales and Disciplines (SP, 12 units, HASS-A)
- 4.302 Foundations in Art, Design & Spatial Practices (SP, 12 units, HASS-A, CI-M)
- 4.500 Design Computing: Art, Objects and Space (FA, 12 units)
- 4.657 Design: The History of Making Things (SP, 12 units, HASS-A, CI-H)

Thesis Subjects (24 units)

- 4.THT J/11.THT J Thesis Research Design Seminar (FA, 12 units, CI-M)
- 4.THU Undergraduate Thesis (SP, 12 units, prereq., 4.THTJ)

Restricted Electives:

Select 4 subject (45-48 units) from among any of the three categories below.

Objects

- 4.031 *Design Studio: Objects and Interaction (FA, 12 units)
- 4.041 Design Studio: Advanced Product Design (SP, 12 units)
- 4.043 Design Studios: Advanced Interaction (SP, 12 units)
- 4.118 Creative Computing (SP, 12 units, prereq., 4.500)
- 4.250J Intro to Urban Design & Development (SP, 12 units, HASS-H)
- 4.451 Computational Structural Design & Optimization (FA, 12 units)
- 4.501 Advanced Design Projects in Digital Fabrication (SP, 12 units)
- 2.00 Introduction to Design (FA, 6 units)
- 2.00A Designing for the Future: Explore Space, Sea & Earth (SP, 9 units)
- 2.00B Toy Product Design (SP, 9 units)
- 2.007 Design & Manufacturing I (SP, 12 units)
- 2.008 Design & Manufacturing II (FA & SP, 12 units, 6 lab units)
- 2.009 The Product Engineering Process (FA, 15 units)
- 2.729 D-Lab: Design For Scale (FA, 12 units)
- 2.750 Medical Device Design (SP, 12 units)
- EC.720 J, 2.722 J D-Lab: Design (SP, 12 units)

Information

- 4.032 *Design Studio: Information & Visualization (SP, 12 units)
- 4.502 Advanced Visualization: Architecture in Motion Graphics (FA, 12 units)
- 4.520 Visual Computing 1 (FA, 12 units)
- 6.1040 Software Design (FA, 18 units)
- 6.4400 Computer Graphics (Fall 12 units)
- 6.837 Advanced Computational Photography (FA, 12 units)
- 6.9101J Introduction to Design Thinking & Innovation (FA&SP, 3 units)
- 6.C35 Interactive Data Visualization & Society (SP, 12 units)
- CMS.405 Visual Design (FA, 12 units, HASS-H)
- CMS.631 Data Storytelling Studio (SP, 12 units, HASS-A)
- CMS.633 Digital Humanities I: Topics, Techniques, & Technologies (FA, 12 units, HASS-H)

Art & Experience

- 4.301 Introduction to Artistic Experimentation (FA&SP, 12 units, HASS-A)
- 4.307 Art, Architecture and Urbanism in Dialogue (FA, 12 units, HASS-A)
- 4.314 Advanced Workshop in Artistic Practice & Transdisciplinary Research (FA, 12 units, HASS-A)
- 4.320 Introduction to Sound Creations (FA, 12 units, HASS-A)
- 4.322 Introduction to Three-Dimensional Art Work (FA, 12 units, HASS-A)
- 4.341 Introduction to Photography and Related Media (FA, 12 units, HASS-A)
- 4.344 Advanced Photography & Related Media (FA, 12 units, HASS-A)
- 4.354 Introduction to Video and Related Media (FA, 12 units, HASS-A)
- 4.356 Cinematic Migrations (FA, 12 units, HASS-A)
- 4.602 Modern Art and Mass Culture (SP, 12 units, HASS-A)
- 21T.120 Introduction to Design for the Theater (SP, 9 units, HASS-A)
- 21T.121 Drawing for Designers (FA&SP, 12 units, HASS-A)
- 21T.320 Interactive Design & Projection for Live Performance (FA, 12 units, HASS-A)

*Either 4.031 or 4.032 may be used as a restricted elective if not selected as part of the design studio requirement.

Design Studios and Foundational Subjects

Design studios are the heart of an architectural education. MIT offers a broad range of studios devoted to design projects of increasing complexity. Architecture majors take five studios sequentially. The maximum size of the 4.023, 4.024, and 4.025 studio sections is 12 students. The fifth studio is optional and can be substituted with two subjects chosen from the list of restricted elective classes.

4.021 or 4.02A Design Studio: How to Design

Fall & Spring, 12 units, HASS-A, IAP, 9 units HASS-A

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.

4.053 Visual Communications Fundamentals

Fall, 12 units, HASS-A, Bo-Won Keum

Provides an introduction to visual communication, emphasizing the development of a visual and verbal vocabulary through the lens of typography. Presents the fundamentals of shape, composition, visual hierarchy, word/image relationships, and type systems as building blocks for communicating with clarity, emotion, and meaning. Students develop their ability to analyze, discuss, and critique both their work and the work of the designed world, with an emphasis on type as a visual and conceptual medium.

Choice of either 4.031 or 4.032:

4.031 Design Studio: Objects and Interaction

Fall, 12 units

Overview of design as the giving of form, order, and interactivity to the objects that define our daily life. Follows the path from project to interactive product. Covers the overall design process, preparing students for work in a hands-on studio learning environment. Emphasizes design development & constraints. Topics include the analysis of objects: interaction design & user experience; design methodologies, current dialogues in design; economies of scale vs. means; & role of technology in design. Provides a foundation in prototyping skills such as carpentry, casting, digital fabrication, electronics, & coding.

4.032 Design Studio: Information and Visualization

Spring, 12 units

Provides an introduction to working with information, data and visualization in a hands-on studio learning environment. Studies the history and theory of information, followed by a series of projects in which students apply the ideas directly. Progresses through basic data analysis, visual design and presentation, and more sophisticated interaction techniques. Topics include storytelling and narrative, choosing representations, understanding audiences, and the role of designers working with data. Limited to 25; Preference to Course 4B majors and Design Minors.

4.110 Design Across Scales and Disciplines

Spring, HASS-A, 12 units,

Inspired by Charles and Ray Eames' canonical Power of Ten, explores the relationship between science and engineering through the lens of design. Examines how transformations in science and technology have influenced design thinking and vice versa. Provides interdisciplinary skills and methods to represent, model, design and fabricate objects, machines, and systems using new computational and fabrication tools. Aims to develop methodologies for design research of interdisciplinary problems. Additional work required of students taking the graduate version of the subject. Enrollment limited; preference to Course 4B majors and Design and Architecture minors.

4.302 Foundations in Art, Design, and Spatial Practices

Spring, HASS-A, CH-M, 12 units, preq., 4.02A or 4.021

Offers a foundation in artistic practice and its critical analysis. Emphasizes the development of artistic approaches and methods and their analogies to architectural thinking and design practice. Develops skills in how to communicate ideas and experiences through two-dimensional, three-dimensional, time-based media, and through new genres. This includes engaging in spatial, sculptural, performative and process-oriented artistic methods. Video screenings, guest lectures, visiting artist presentations, field trips, and readings supplement studio practice. Instruction and practice in written and oral communication provided. Lab fee. Preference to Course 4 and 4B majors.

4.500 Design Computing: Art, Objects and Space

Fall, 12 units

Introduces 3-D CAD modeling to students with little or no experience in design or computation. Teaches surface, solid and mesh modeling techniques combined with a variety of modeling assignments leading up to a final project. Additional work required of students taking the graduate version. Enrollment limited preference to Course 4 and 4B majors and Design and Architecture minors. Lab fee.

4.657 Design: The History of Making Things

Spring, 12 units HASS-A, CI-H

Examines themes in the history of design, with emphasis on Euro-American theory and practice in their global contexts. Addresses the historical design of communications, objects, and environments as meaningful processes of decision-making, adaptation, and innovation. Critically assesses the dynamic interaction of design with politics, economics, technology, and culture in the past and at present. Limited to 36.

Senior Thesis

The senior thesis allows architecture & design majors to culminate their education with a challenge that demands advanced work and rewards them with portfolio material, research documents, and developed viewpoints on a topic of importance. A thesis is required for Course 4/BSA and for Course 4B/BSAD majors.

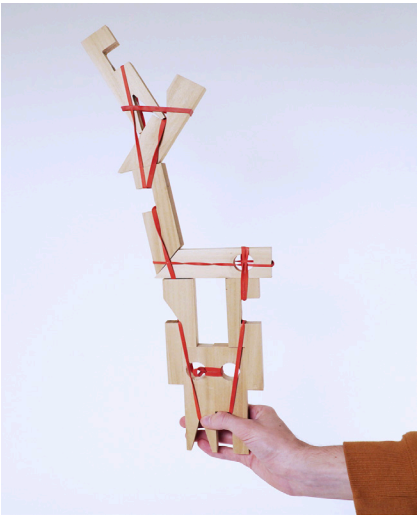
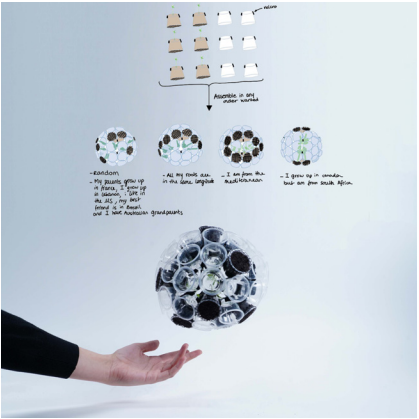
The nature of the work must be an original research or an architecture or design project that involves additional learning of a substantive nature. The work must be documented with a written thesis completed to Institute specifications within the final term of the senior year. The final document is archived within the MIT library and can be submitted to DSpace.

A thesis preparation subject is taken during the fall prior to registering for thesis and assists students in preparing a thesis proposal and choosing a thesis advisor.

- 4.THT Thesis Research Design Seminar, a 12-unit, CI-M class is for BSA and BSAD students wishing to focus on a research thesis.
- 4.THU Undergraduate Thesis, 12-units, for Course 4/BSA and Course 4B/BSAD students, Prerequisite 4.THT

The thesis advisor may be a faculty member, lecturer, visiting faculty, or research scientist from within Course 4 or from another department within MIT. If chosen from a department other than Architecture, a faculty member within Course 4 willing to work in conjunction with the advisor must be added to the proposal as a reader. No additional readers are required.

Upon satisfactory completion of the thesis, the advisor will assign a grade. The grade will not be submitted to the Registrar until a copy of the final signed thesis document is submitted to the undergraduate administrator in Headquarters by the published thesis deadline. Thesis presentations will be scheduled at the end of the spring term in coordination with graduate reviews.

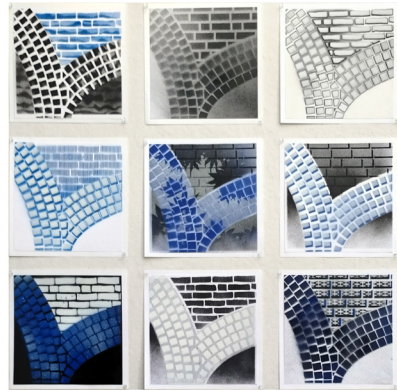
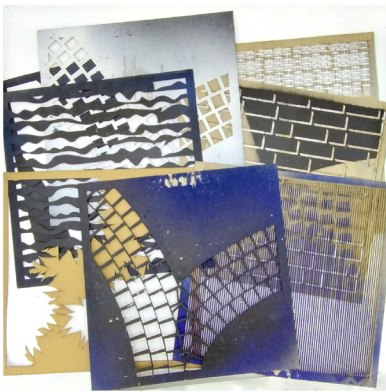
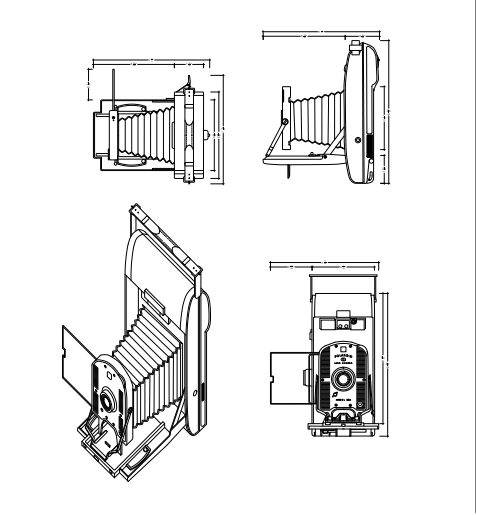
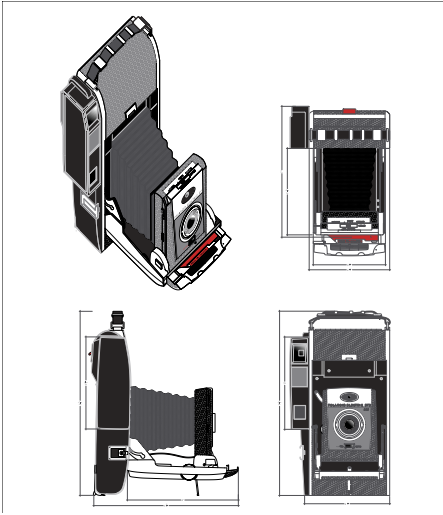




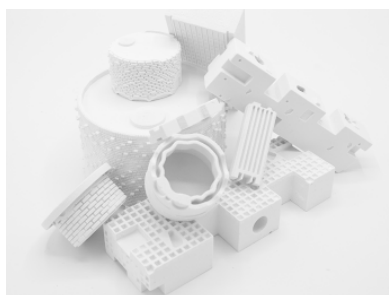
4.021 & 4.02A Introduce fundamental design principles as a way to demystify design and provide a basic introduction to all aspects of the design process. Through lectures and weekly exercises, students develop their abstract thinking, designing, and making skills, harness their creativity, and learn the necessary design skills of iteration, representation, and presentation.

4.021 & 4.02A are appropriate for students with and without a design background, and are geared towards enabling more effective collaboration between students.

4.021 & 4.02A equip students with the ability to apply foundational design principals and the design process to any discipline. Limited to 25; preference to Course 4 and 4B majors and minors, first- and second-year students.



4.022 Design Studio: Introduction to Design Techniques and Technologies introduces the tools, techniques, & technologies that form the basis of the design professions. The studio explores observation, measurement, drawing, & physical making as instruments for generating & conveying ideas. The semester is organized around 3 design projects. Each project focuses on different methods & mediums, but emphasizes the common themes of iterative testing, precision, & material craft. Work is supported by a range of digital design & fabrication technologies. Throughout, students are prompted to consider their work within a broader set of cultural, technical, & historic contexts. Course format includes workshops, lectures, one-on-one instruction, & periodic reviews with guest critics.

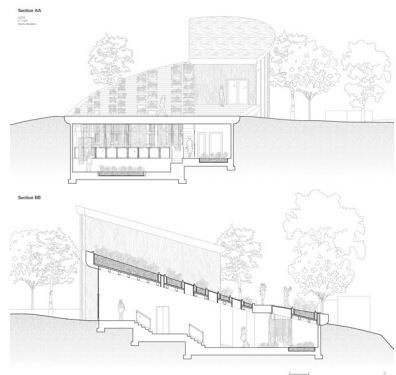
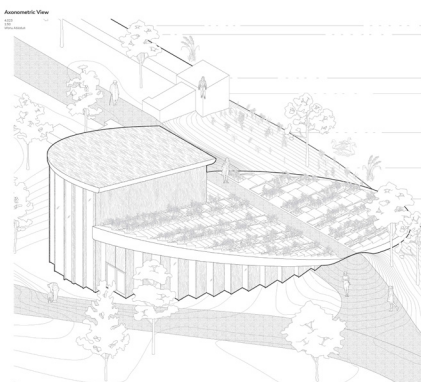
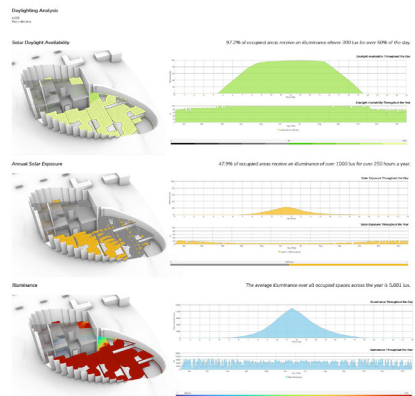
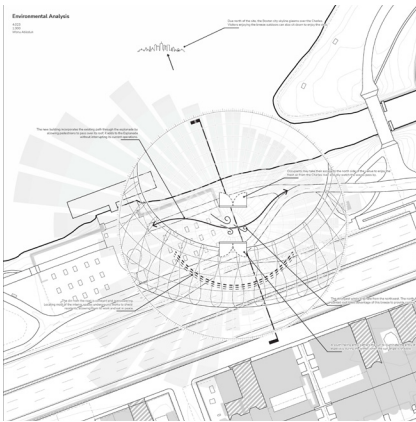


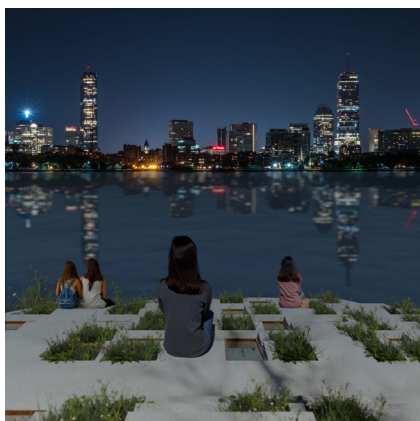


4500 Design Computation: Art, Objects and Space introduces undergraduate, course four of foundational technologies weekly, this includes 3D printing, Computer Generated Rendering, and each exercise. Although the medium for the course is centered on computer modeling, applications are diverse. Students work on one project throughout the term starting with a deep



for majors and minors design and computation through application. 4.500 explores an array of learning and CNC technologies. Students also learn to establish design principles as part of application is guided by weekly design exercises, student presentations, and faculty feedback. The product analysis, ending with a useful, well designed physical artifact.



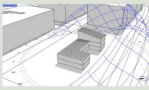


4.023 Architecture Studio 1 students study rituals of dining, culminating in a comprehensive exercise in spatial, material & programmatic design.

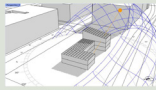
The studio encourages each student to embark on a design exploration that begins with the elemental consideration of ingredients and materials and extends to the realm of spatial design.

4.023 embraces the tactile & experiential dimensions of dining, offering students the opportunity to explore intricacies from the individual's sensory encounter to the collective communal potential of the program.

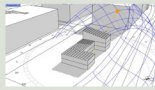
SITE ANALYSIS



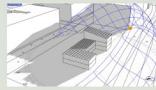
Autumnal Equinox, 9:58 am.



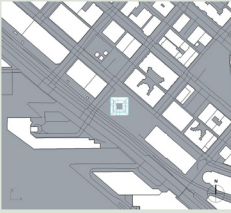
Summer Solstice, 9:58 am.



Vernal Equinox, 9:58 am.



Winter Solstice, 9:58 am.



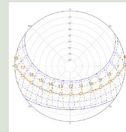
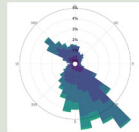
SITE

Our project replaces this complex

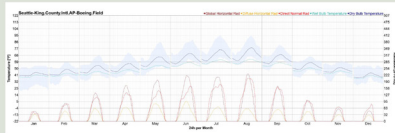
CLIMATE ANALYSIS



SEATTLE, WA
47.53 °N, 122.30 °W

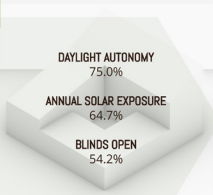


ASHRAE CLIMATE ZONE: 4C (Mixed Marine)
AVG ANNUAL TEMP: 54°F
HEATING DEGREE DAYS (64 °F): 4,740
COOLING DEGREE DAYS (50 °F): 715



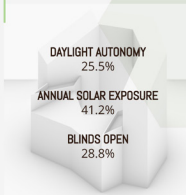
MASSING ITERATIONS

CONCEPT 1



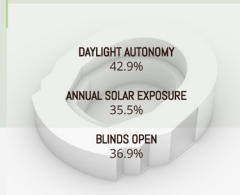
A simple stepped and staggered atrium configuration

CONCEPT 2



A geometric staggered atrium

CONCEPT 3

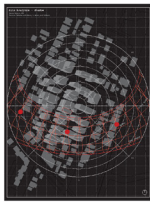


A variation on a round building

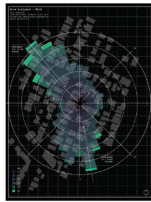


Site Analysis

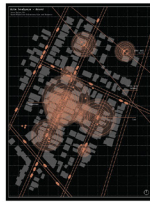
The method of mitigating clock time in this project heavily depends on the environmental forces as they are essentially the primal way of recognizing tempo. Recognizing light and shadow falling on a specific location during the time of day, feeling the wind gently breeze through the corner windows, and hearing the school bus drive by each morning and afternoon, these indications help with erasing the sharpness and preciseness in traditional clock time but still preserves the vagueness and allow occupants to grasp the hints of time.



Shadow



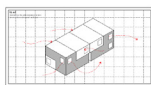
Wind



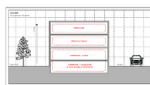
Sound



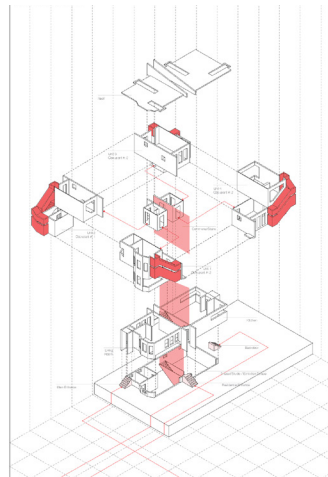
Distinct skylight openings allow for unique lighting experience



Interlocking units creates more corners to allow wind passing through

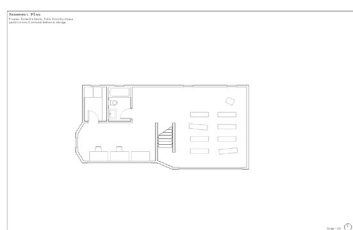
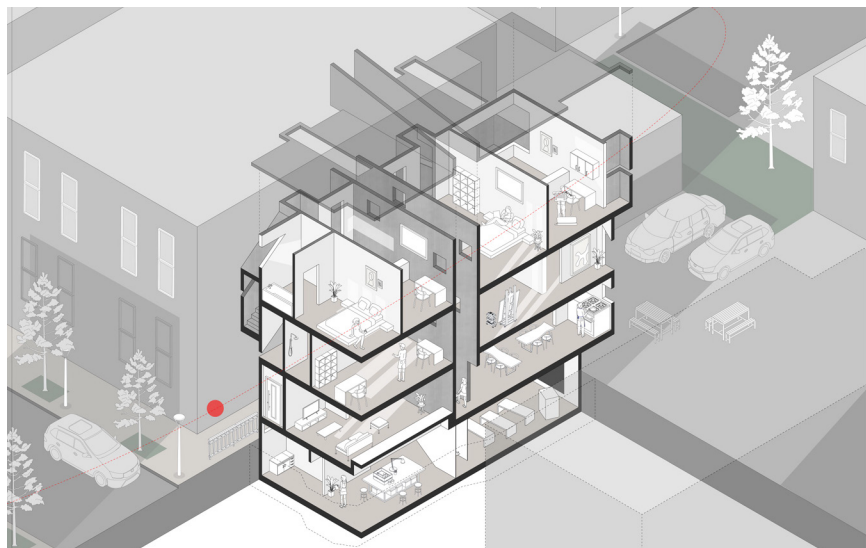


Programmatic approach with bedrooms on top and communal space at the bottom

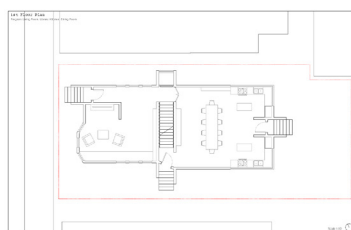


4.024 Architecture Design Studio 2: Domestic Revolution

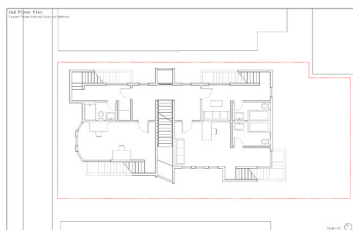
This studio reconsiders the “home” as catalyst and stabilizer for alternative ways of living and belonging. Personal knowledge is centered as the starting point: the semester begins with an extended precedent & research study prompted by each student’s own experience. Students work iteratively & carefully through architectural drawing & modeling, paying attention to the dual development of ideas & craft through representation & presentation. In the latter portion of the semester, students develop individual projects with an interrelated social & spatial structure as a proposal for a non-normative model of domesticity.



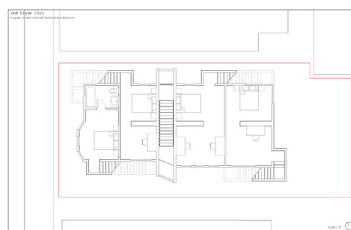
Basement Plan: Communal Studio, Laundry Room, Bathroom



1st floor plan: Living room, Kitchen, Dining Room



2nd floor plan: Private Studios, Private Bathrooms



3rd floor plan: Private Bedrooms



Living Room: 9am



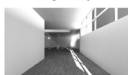
Living Room: 3pm



Lighting Detail 1



Basement: 9am



Basement: 3pm



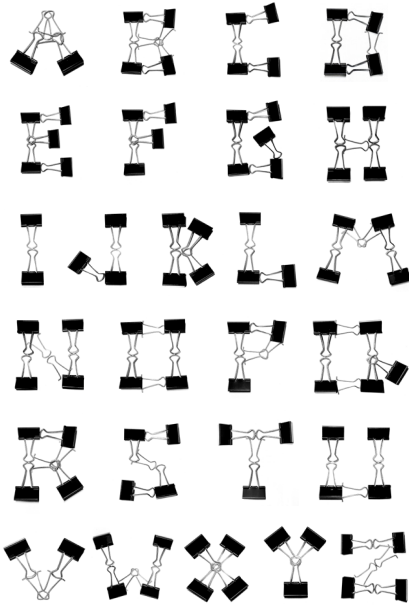
Lighting Detail 2



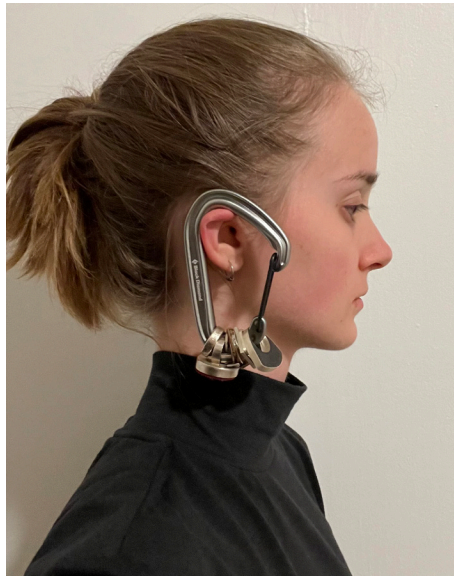
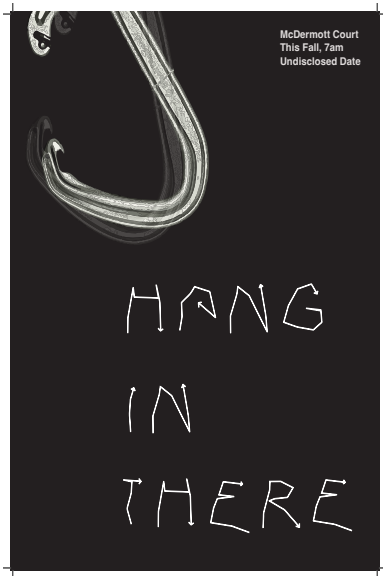
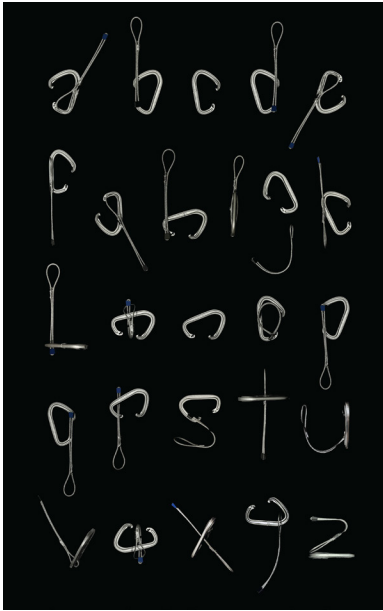
Model: West Elevation



Model: Perspective

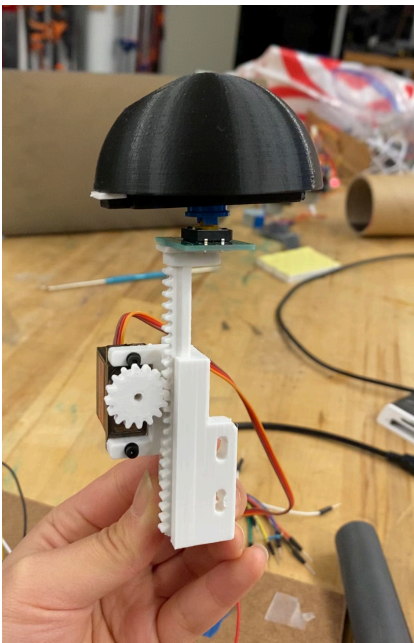


4.053 Visual Communications Fundamentals is an introduction to visual communication, through readings, screenings, history lectures, assignments, & exercises that draw from semiotic theory & practice. Students will become familiar w./core tenets of visual communication (shape, line, composition, visual hierarchy, & typography) w./ particular emphasis on how signs & images are constructed.

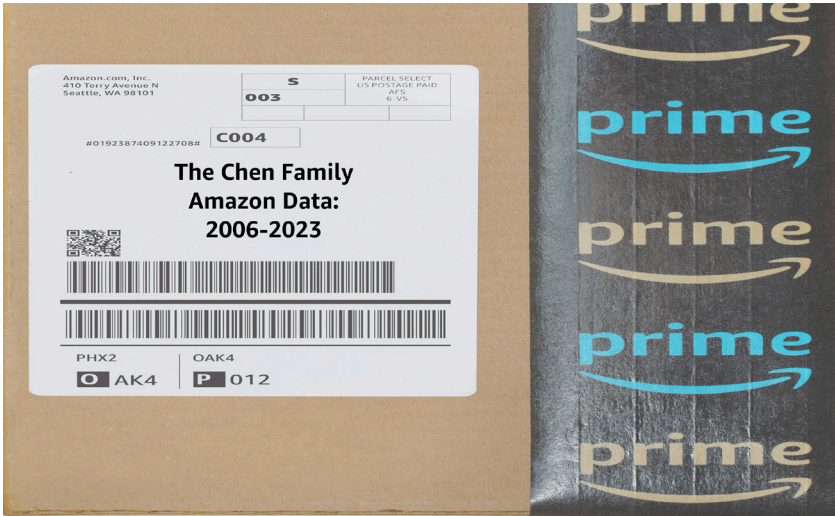


Students learn how to recognize, harness, & utilize graphic tools & strategies, such as shifting scale, juxtaposition, editing, employing hierarchy, reordering, free-associating, & cropping, in order to communicate & develop visual ideas w./ clarity & precision. 4.053 serves as a foundation w./ which to develop a visual methodology used to build other forms of communication design practice.

4.031 Design Studio: Objects and Interactions is an overview of design as the giving of form, order, & interactivity to the objects that define our daily life. 4.031 follows the path from project to interactive product. 4.031 covers the overall design process, preparing students for work in a hands-on studio learning environment emphasizing design development and constraints. Topics include the analysis of objects: interaction design & user experience; design methodologies, current dialogues in design; economies of scale vs. means; & role of technology in design. 4.031 provides a foundation in prototyping skills such as carpentry, casting, digital fabrication, electronics, and coding.

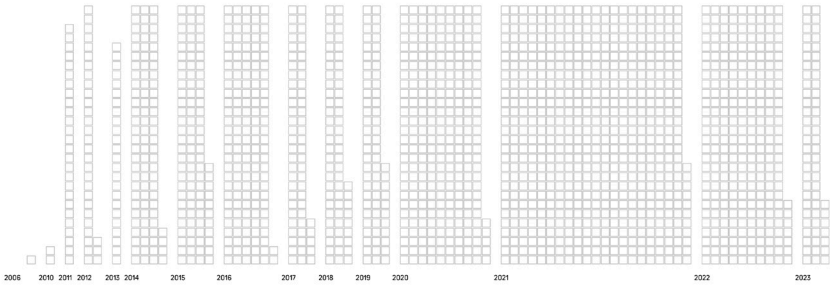






click on a year to zoom in

type a word



explore:

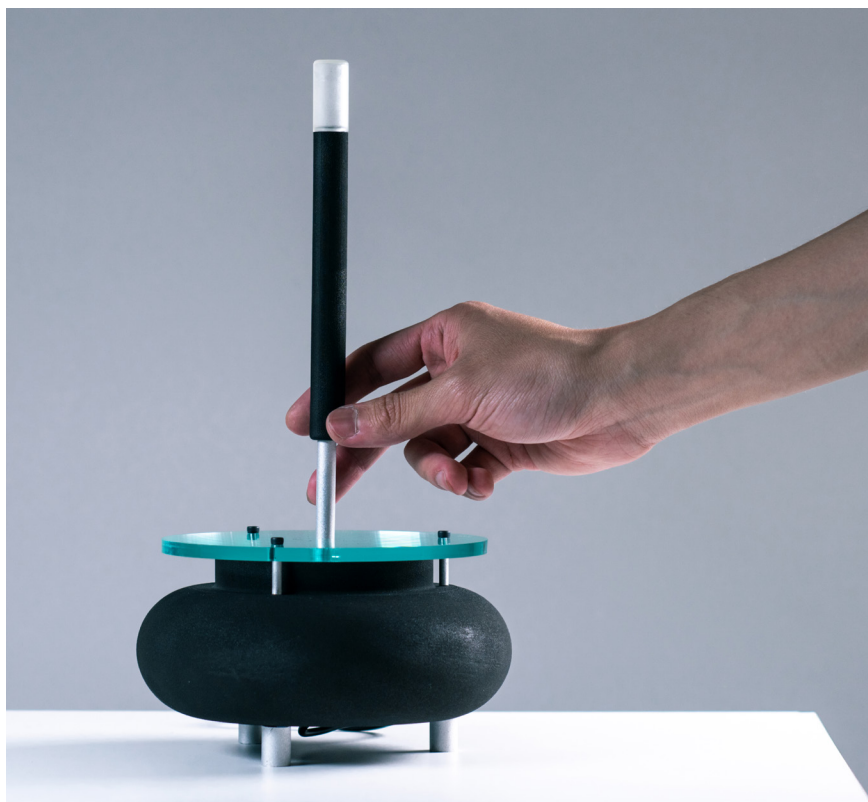
- addresses
- books
- food
- people
- anything

Search a keyword in the search bar to see any matched orders- anything goes!

type a word

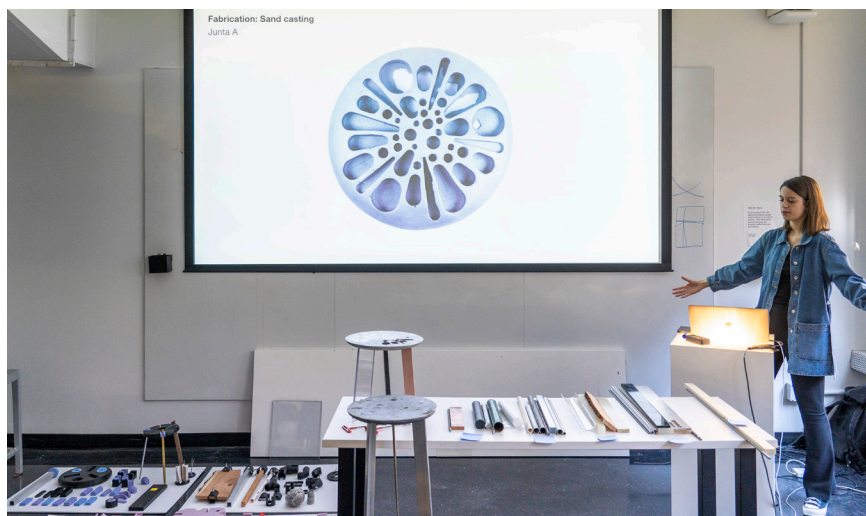
Your word searched

4.032 Information & Visualization provides an introduction to working with information, data & visualization in a hands-on studio learning environment. 4.032 students study the history & theory of information, followed by a series of projects in which students apply their ideas directly. 4.032 progresses through basic data analysis, visual design & presentation, to more sophisticated interaction techniques. Topics include storytelling & narrative, choosing representations, understanding audiences, & the role of designers working with data.





4.043 Interaction Intelligence is an overview of core principles & techniques for the design of interaction, behavior, & intelligence across objects & spaces. Students develop low & high-fidelity interactive prototypes that can be deployed & experienced by real users. Lectures cover the history & principles of human-computer interaction, behavior prototyping, physical & graphical user interfaces, machine intelligence, neural networks, & large language models. 4.043 provides a foundation in technical skills, such as physical prototyping, coding, & electronics, as well as how to collect data, train, & deploy their own neural network models.

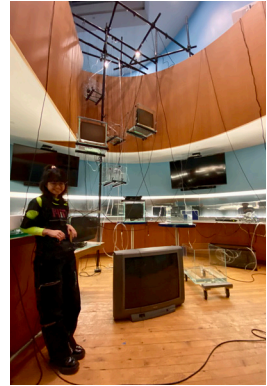


4.041 Advanced Product Design: Rethinking Product Design Ecology is an advanced product design studio that addresses the pressing ecological crises of our time. Students invent their own experimental typologies of furniture (lighting, modular systems, unconventional new objects for the future, etc.), develop novel ecological materials, & utilize cutting-edge fabrication technology.

Students imagine the entire lifecycle of their product, including materials, manufacture, use & re-use. 4.041 Advanced Product Design prepares students for careers in design, product technology and other industries, developing advanced skills in design critique, hands-on making and professional-level documentation.







U.G. THESIS REVIEWS

AUDREY GATTA 9-10 a.m.
Leveling Out the Left Field: Toy Design for Left-Handed Children
The thesis is designed to help left-handed children with their schoolwork and play. It includes a series of toys that are designed to be used with the left hand. The toys are made of wood and are easy to use. They are also designed to be used by right-handed children. The thesis is a great example of how to design for a specific audience.

JULIANA GREEN 10-11 a.m.
Stories Through Data: the Relationship Between COVID 19 & Data Graphics on the New York Times Front Page
The thesis explores the relationship between COVID 19 and data graphics on the New York Times front page. It includes a series of data graphics that are designed to be used by the general public. The thesis is a great example of how to use data to tell a story.

FELIX LI 11-12 p.m.
Wok Palace 88
The thesis is a collection of recipes and stories from a restaurant called Wok Palace 88. It includes a series of recipes that are designed to be used by the general public. The thesis is a great example of how to use food to tell a story.

KATHERINE GUO 2-3 p.m.
The Bengal School of Art and Nihonga (1902-1928): Art Toward a Modern Asian Identity
The thesis explores the relationship between the Bengal School of Art and Nihonga. It includes a series of art pieces that are designed to be used by the general public. The thesis is a great example of how to use art to tell a story.

SOPHIA CHEN 2-3 p.m.
Design of an Adjustable Compression Glove for Hand Arthritis
The thesis is a design for a compression glove for hand arthritis. It includes a series of diagrams and a prototype. The thesis is a great example of how to design a product for a specific audience.

JENNY ZHANG 3-4 p.m.
Crowdsourcing Feedback for Gamified Participatory Planning Workshops
The thesis explores the relationship between crowdsourcing feedback and gamified participatory planning workshops. It includes a series of diagrams and a prototype. The thesis is a great example of how to design a product for a specific audience.

KARYN NAKAMURA 4-5 p.m.
BREAK MY BODY LIBERATE MY SOUL
The thesis is a collection of stories and photos from a project called Break My Body Liberate My Soul. It includes a series of stories and photos that are designed to be used by the general public. The thesis is a great example of how to use stories and photos to tell a story.

MAY 17 (9-451)

4.THU Senior Thesis allows students to culminate their education with a challenge that demands advanced work and rewards them with portfolio material, research documents, and developed viewpoints on a topic of importance. The nature of the work must be an original research or design project that involves additional learning of a substantive nature. The work must be documented with a written thesis completed to Institute specifications within the final term of the senior year. The final document is archived within the MIT library and can be submitted to DSpace. A thesis preparation subject is taken the fall prior to registering for thesis and assists students in preparing a thesis proposal and choosing an advisor.

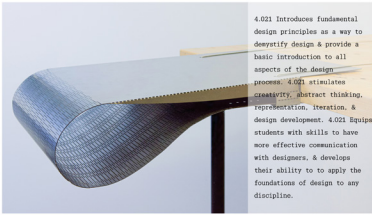


Image: Aria Bao & Yube Zhao

4.021 How to Design

Latifa Alkhatay & Paul Pettigrew
MW 2-5:00 p.m.
7-434

4.021 Introduces fundamental design principles as a way to demystify design & provide a basic introduction to all aspects of the design process. 4.021 stimulates creativity, abstract thinking, conceptualization, iteration, & design development. 4.021 Equips students with skills to have more effective communication with designers, & develops their ability to apply the foundations of design to any discipline.

4.021 assigns 3 projects exploring various topics through concepts, drawings, & physical fabrication. Students engage with an increasing level of design research through iterative studies & move fluidly between different modes & scales of operation.

TRF

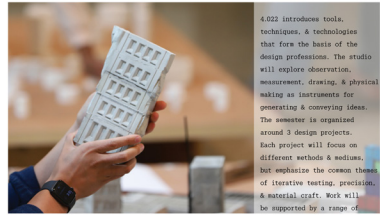


Image: Robert Canada

4.022 Introduction to Design Techniques & Technologies

Carrie Norman & Emily Wissemann
MW 2-5:00 p.m.
7-434

4.022 introduces tools, techniques, & technologies that form the basis of the design professions. The studio will explore observation, measurement, drawing, & physical making as instruments for generating & conveying ideas. The semester is organized around 3 design projects. Each project will focus on different methods & mediums, but emphasize the common themes of iterative testing, precision, & material craft. Work will be supported by a range of digital design & fabrication technologies. Throughout, students will be prompted to consider their work within a broader set of cultural, technical, & historic contexts. Course format will include workshops, lectures, one-on-one instruction, and periodic reviews with guest critics.

TRF

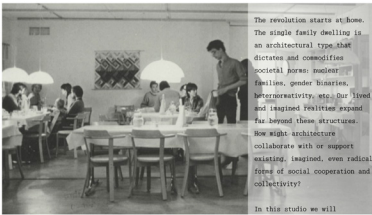


Image: Rick Urban Walters

4.024 Domestic Revolution

Rosalyn Shieh & Natalie Pearl
TRF 1-5:00 p.m.
7-403

The revolution starts at home. The single family dwelling is an architectural type that dictates and commodifies social forms: nuclear families, gender binaries, heterosexuality, etc. But flawed and inequitable as it is, it has far beyond these structures. How might architecture collaborate with or support existing, imagined, even radical forms of social cooperation and collectivity?

In this studio we will reconsider the "house" as catalyst and stabilizer for alternative ways of living and belonging. Personal knowledge is centered as the starting point. We will work iteratively & carefully through architectural drawing & modeling, paying attention to the dual development of ideas & craft through representation & presentation.

TRF

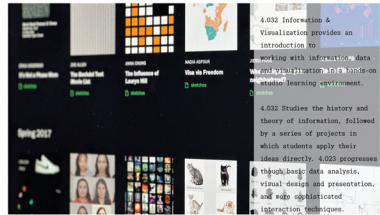


Image: Benjamin Fry

4.032 Information & Visualization

Ben Fry
MF 9:30-11:00 a.m.
NS2-337

4.032 Information & Visualization provides an introduction to working with information, data, and visualization in a hands-on studio-learning environment.

4.032 Studies the history and theory of information, followed by a series of projects in which students apply their ideas directly. 4.032 emphasizes thoughtful data analysis, visual design and presentation, and more sophisticated interaction techniques.

Topics include storytelling and narrative, choosing representations, understanding audiences, and the role of designers working with data.

TRF

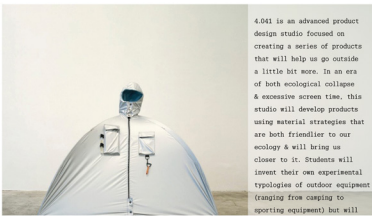


Image: L-Orta

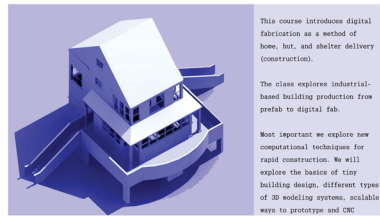
4.041 Advanced Product Design

Xavi Laida Aguirre
TR 2-5:00 p.m.
N-52-342C

4.041 is an advanced product design studio focused on creating a series of products that will help us go outside a little bit more. In an era of both ecological collapse & excessive screen time, this studio will develop products using material strategies that are both friendlier to our ecology & will bring us closer to it. Students will invent their own experimental typologies of outdoor equipment (ranging from camping to sporting equipment) but will do so through circular design methods including designing for disassembly, modularity, future proofing and flexibility of use.

4.041 prepares students for careers in design, product technology, developing advanced skills in design critique, hands-on making, & professional-level documentation.

TRF



4.501 Tiny Fab: Advancements in Rapid Design & Fabrication of Small Homes

Larry Sass
T 9-12:00 p.m.
1-136

This course introduces digital fabrication as a method of how, but, and shelter delivery (construction).

The class explores industrial-based building production from prefab to digital fab.

Most important we explore new computational techniques for rapid construction. We will explore the basics of tiny building design, different types of 3D modeling systems, scalable ways to prototype and CNC fabrication.

The focus is on learning by doing. The class result will be a well-designed prototype of a small building as a single packaged product.

TRF

Course 4 Minors

The Architecture Department offers four minors

- Design

Minor Advisor — Skylar Tibbits · N52-394 · sjet@mit.edu

- Architecture

Minor Advisor — Carrie Norman · 10-491M · cnorman@mit.edu

- History of Architecture, Art and Design (HASS)

Minor Advisor — Kristel Smentek · 3-305G · smentek@mit.edu

- Art, Culture and Technology (HASS)

Minor Advisor — Nida Sinnokrat · E15-213 · nidasinn@mit.edu

The Minor in Design provides a cohesive program of study that exposes students to the cross-disciplinary field of design. It provides a rigorous conceptual foundation in design along with strong design skills. Gives an introduction to design from concept to completion through contextual critical thinking, experimentation representation, and physical production techniques, critique, iteration and reflection.

The Minor in Architecture is designed to give students a foundation in the multidisciplinary study of the built environment. The minor allows students to pursue a focused program of study across the architecture department's diverse discipline groups.

The HASS Minor in the History of Architecture, Art and Design is designed to enable students to concentrate on the historical, theoretical, and critical issues associated with artistic and architectural production.

The HASS Minor in Art, Culture and Technology is designed for students interested in hands-on artistic practice and critical debate.

The HASS Minor is often an extension of the HASS concentration available in each of these disciplines. Students who successfully complete a minor program will have the field of study specified on their student transcript, thus giving recognition of focused work in the discipline. For more information on HASS Minors, visit <https://shass.mit.edu/undergraduate/minors>

Minor in Design

Take three subjects from Group 1 and three subjects from Group 2.

Group 1 — Take 3 subjects

- 4.021, Design Studio: How to Design (FA & SP, HASS-A, 12 units) or 4.02A, Design Studio: How to Design Intensive (IAP, HASS-A, 9 units)
- 4.053, Visual Communication Fundamentals (FA, 12 units, HASS-A)
- 4.031, Design Studio: Objects and Interaction (FA, 12 units) or 4.032, Design Studio: Information and Visualization (SP, 12 units)

Group 2 — Take 3 subjects

Objects

- 2.00 Introduction to Design (FA, 1/2 term, 6 units)
- 2.00A Fundamentals of Engineering Design: Explore Space, Sea & Earth (SP, 9 units)
- 2.00B Toy Product Design (SP, 9 units)
- 2.007 Design & Manufacturing 1 (SP, 12 units)
- 2.008 Design & Manufacturing II (FA & SP, 12 units, 6 lab units)
- 2.009 The Product Engineering Process (FA, 12 units)
- 2.729 D-Lab: Design For Scale (FA, 12 units)
- 2.750 Medical Device Design (SP, 12 units)
- 4.031 Design Studio: Objects and Interaction (if not used above) (FA, 12 units)
- 4.041 Design Studio: Advanced Product Design (SP, 12 units, prereq., 4.031)
- 4.043 Design Studio: Advanced Interactions (SP, 12 units, prereq., 4.031)
- 4.110 Design Across Scales and Disciplines (SP, 12 units, HASS-A)
- 4.118 Creative Computing (SP, 12 units, prereq., 4.500)
- 4.451 Computational Structural Design & Optimization (FA, 12 units)
- 4.501 Advanced Design Projects in Digital Fabrication (SP, 12 units)
- 4.657 Design: The History of Making Thing (SP, 12 units, HASS-A, CI-H)
- EC.720J D-Lab: Design (12 units)

Information

- 4.032 Design Studio: Information and Visualization (if not used above) (SP, 12 units)
- 4.051 The Human Factor in Innovation and Design Strategy (12 units, FA)
- 4.500 Design Computing: Art, Objects and Space (FA, 12 units)
- 4.502 Advanced Visualization: Architecture in Motion Graphics (FA, 12 units)
- 4.520 Visual Computing (FA, 12 units)
- 6.1040 Software Design (FA, 18 units)
- 6.4400 Computer Graphics (Fall 12 units)
- 6.8371 Advanced Computational Photography (FA, 12 units)
- 6.9101J Introduction to Design Thinking & Innovation (FA&SP, 3 units)
- 6.C35 Interactive Data Visualization & Society (SP, 12 units)
- CMS.405 Visual Design (SP, 12 units, HASS-H)
- CMS.631 Data Storytelling Studio (SP, 12 units, HASS-A)
- CMS.633 Digital Humanities: Topics, Techniques, & Technologies (12 units, HASS-H)

Art and Experience

- 4.301 Introduction to Artistic Experimentation (FA/SP, 12 units, HASS-A)
- 4.302 Foundations in Art, Design & Spatial Practices (SP, 12 units, HASS-A, CI-M, preq., 4.021 or 4.02A)
- 4.307 Art, Architecture and Urbanism in Dialogue (FA, 12 units, HASS-A, prereq., 4.301 or 4.302)
- 4.320 Introduction to Sound Creations (FA, 12 units HASS-A)
- 4.322 Introduction to 3-D Art Work (FA, 12 units, HASS-A)
- 4.341 Introduction to Photography & Related Media (FA, 12 units HASS-A)
- 4.354 Intro to Video & Related Media (FA, 12 units HASS-A)
- 4.602 Modern Art & Mass Culture (SP, 12 units HASS-A)
- 21T.120 Introduction to Design for the Theater (SP, 9 units, HASS-A)
- 21T.121 Drawing for Designers (FA&SP, 12 units, HASS-A)
- 21T.320 Interactive Design & Projection for Live Performance (FA, 12 units, HASS-A)

Total for Minor in Design = 6 subjects

Minor in Architecture

Take the two required subjects, then follow Option 1 or 2:

- 4.021 Design Studio: How to Design (FA/SP, 12 units, HASS-A) or 4.02A Design Studio: How to Design Intensive (IAP, 9 units, HASS-A)
- 4.022 Design Studio: Introduction to Design Techniques and Technologies (FA&SP, 12 units, preq., 4.021 or 4.02A)

Option 1 — Take 3 subjects

- 4.023 Architecture Design Studio 1 (FA, 24 units, CI-M, preq., 4.022)
- Plus two subjects from the following list of electives

Option 2 — Choose 4 subjects from the following list of electives

Architecture and Urbanism

- 4.041 Design Studio: Advanced Product Design (SP, 12 units)
- 4.053 Visual Communication Fundamentals (FA, 12 units, HASS-A; CI-H)
- 4.250J Introduction to Urban Design and Development (FA, 12 units, HASS-A)

Art, Culture and Technology

- 4.301 Introduction to Artistic Experimentation (FA/SP, 12 units, HASS-A)
- 4.302 Foundations in Art, Design & Spatial Practices (SP, 12 units, HASS-A, CI-M, preq., 4.021 or 4.02A)
- 4.307 Art, Architecture and Urbanism in Dialogue (FA, 12 units HASS-A)
- 4.322 Introduction to Three-Dimensional Artwork (FA, 12 units, HASS-A)
- 4.341 Introduction to Photography & Related Media (FA&SP, 12 units, HASS-A)
- 4.344 Advanced Photography & Related Media (FA&SP, 12 units, HASS-A)
- 4.354 Introduction to Video & Related Media (SP, 12 units, HASS-A)
- 4.356 Cinematic Migrations (FA, 12 units, HASS-A)
- 4.368 Studio Seminar in Art and the Public Sphere (SP, 12 units, HASS-A)
- 4.373 Advanced Projects in Art, Culture, & Technology (FA, 12 units, HASS-A)

Building Technology

- 4.401 Environmental Technologies in Buildings (FA, 12 units, REST)
- 4.432 Modeling Urban Energy Flows for Sustainable Cities & Neighborhoods (12 units, SP)
- 4.440J Introduction to Structural Design (SP, 12 units, LAB, preq., 18.02)
- 4.451 Computational Structural Design and Optimization (FA, 12 units)

Computation

- 4.500 Design Computing: Art, Objects and Space (FA, 12 units)
- 4.501 Tiny Fab: Advanced Applications in Digital Fabrication (SP, 12 units)
- 4.502 Advanced Visualization: Architecture in Motion Graphics (FA, 12 units)
- 4.507 Introduction to Building Information Modeling in Architecture (SP, 12 units)
- 4.520 Visual Computing 1 (FA, 12 units)
- 6.1040 Software Design (FA, 18 units)
- 6.4400 Computer Graphics (FA, 12 units)
- 6.8371 Digital & Computational Photography (FA, 12 units)
- CMS.405 Visual Design (FA, 12 units, HASS-H)
- CMS.631 Data Storytelling Studio (SP, 12 units, HASS-A)
- CMS.633 Digital Humanities: Topics, Techniques, & Technologies (FA, 12 units, HASS-H)

History and Theory of Architecture, Art, and Design

- 4.601 Introduction to Art History (FA, 12 units, HASS-A)
- 4.602 Modern Art & Mass Culture (SP, 12 units, HASS-A; CI-H)
- 4.603 Understanding Modern Architecture (FA, 12 units, HASS-A)
- 4.605 A Global History of Architecture (SP, 12 units, HASS-A)
- 4.609 Seminar in the History of Art and Architecture (SP, 12 units, HASS-A)
- 4.614 Building Islam (FA, 12 units, HASS-A)
- 4.635 Early Modern Architecture and Art (FA, 12 units, HASS-A)
- 4.636 Topics in European Medieval Architecture and Art (FA, 12 units, HASS-A)
- 4.651 Art Since 1940 (SP, 12 units, HASS-A)
- 4.657 Design: The History of Making Things (SP, 12 units, HASS-A; CI-H)

Total for Minor in Architecture = 5 or 6 subjects

Minor: History of Architecture, Art & Design

The program consists of six subjects arranged into three levels of study. Two are taken from Group 1, three from Group 2, & one from Group 3.

Group 1 (Take 2 subjects)

History of Architecture (Choose one subject)

- 4.605 A Global History of Architecture (SP, 12 units, HASS-A)
- 4.614 Building Islam (FA, 12 units, HASS-A)

History of Art (Choose one subject)

- 4.601 Introduction to Art History (FA, 12 units, HASS-A)
- 4.602 Modern Art & Mass Culture (SP, 12 units, HASS-A; CI-H)

Group 2 (Take 3 subjects)

History of Architecture and Design

- 4.603 Understanding Modern Architecture (FA, 12 units, HASS-A)
- 4.606 Environmental Histories of Architecture (SP, 12 units, HASS-H)
- 4.622 Islamic Gardens & Geographies (SP, 12 units, HASS-A)
- 4.657 Design: The History of Making Things (SP, 12 units, HASS-A; CI-H)

History of Art

- 4.635 Early Modern Architecture & Art (FA, 12 units, HASS-A)
- 4.636 Topics in European Medieval Architecture & Art (FA, 12 units, HASS-A)
- 4.641 19th-Century Art: Painting in the Age of Steam (FA, 12 units, HASS-A)
- 4.651 Art Since 1940 (SP, 12 units, HASS-A)
- 4.674J French Photography (SP, 12 units, HASS-A; CI-H)

Group 3 (Take 1 subject)

- 4.609 Seminar in History of Art and Architecture (or other advanced seminars with permission of the Minor Advisor; also, selected courses at Harvard and Wellesley) (SP, 12 units, HASS-A)

Total for Minor in History of Architecture & Art = 6 subjects

Minor: Art, Culture & Technology

The ACT program consists of six subjects arranged into three levels of study. Two subjects are taken from each group.

Group 1 - Take 2 subjects

4.301 Introduction to Artistic Experimentation (FA&SP, 12 units, HASS-A) or
4.302 Foundations in Art, Design & Spatial Practices
(SP, 12 units, HASS-A; CI-M, preq., 4.021 or 4.02A)

and one from the following list:

- 4.601 Introduction to Art History (FA, 12 units, HASS-A)
- 4.602 Modern Art and Mass Culture (SP, 12 units, HASS-A)
- 4.635 Early Modern Architecture and Art (FA, 12 units, HASS-A)
- 4.636 Topics in European Medieval Architecture and Art (FA, 12 units, HASS-A)
- 4.641 19th-Century Art: Painting in the Age of Steam (FA, 12 units, HASS-A)
- 4.651 Art Since 1940 (SP, 12 units, HASS-A)
- 4.657 Design: The History of Making Things (SP, 12 units, HASS-A; CI-H)

Group 2 - Take 2 subjects

- 4.320 Introduction to Sound Creations (FA, 12 units, HASS-A)
- 4.322 Introduction to Three-Dimensional Art Work (FA, 12 units, HASS-A)
- 4.341 Introduction to Photography and Media (FA&SP, 12 units, HASS-A)
- 4.354 Introduction to Video and Related Media (FA&SP, 12 units, HASS-A)

Group 3 - Take 2 subjects

- 4.314 Advanced Workshop in Artistic Practice and Trans-disciplinary Research (FA, 12 units, HASS-A)
- 4.344 Advanced Photography and Related Media (FA&SP, 12 units, HASS-A)
- 4.352 Advanced Video and Related Media (FA&SP, 12 units, HASS-A)
- 4.356 Cinematic Migrations (SP, 12 units, HASS-A)
- 4.361 Performance Art Workshop (SP, 12 units, HASS-A)
- 4.368 Studio Seminar in Public Art/Public Space (SP, 12 units, HASS-A)
- 4.373 Advanced Projects in Visual Arts (FA&SP, 12 units, HASS-A)

Total for Minor in ACT = 6 subjects

ARCHITECTURE LICENSURE WORKSHOP

When: Thursday February 16, 2023 5:30 p.m. - 6:30 p.m.

Where: 9-450

Who: Emily Anderson, AIA, NCARB, NCARB Outreach Manager

What: This presentation will cover:

1. The Steps to Architecture Licensure
2. NCARB's Architectural Experience Program (AXP)
3. Overview of Architect Registration Examination (ARE)
4. Recent Changes to AXP & ARE
5. Transition From School to Profession
6. Value of Licensure

Food Will Be Provided

ARCHITECTURE PORTFOLIO WORKSHOP w./

JEREMY ALAIN SIEGEL

BIG

Bjarke Ingels Group

Wondering what BIG looks like in the portfolios of future employees? This is your opportunity to gain portfolio design insights from a BIG Associate who's been reviewing applicant portfolios for the last nine years.

Jeremy Alain Siegel has been working with BIG since the establishment of the New York office in 2010. He is currently a Project Leader and has seen a wide range of competitions and concept designs through from start to finish, including an extension to the American Museum of Natural History, residences on the NY Highline, master-planning for the Smithsonian Institution, Chicago Southwicks, and Willets Point, as well as 14 years on the Pritzker Foundation International Financial Center in Tianjin, with a focus on the 800m landmark tower.

Jeremy brings a keen interest in issues of urbanism, landscape, and the complexities of large-scale building types, and has worked at the Office for Metropolitan Architecture in Rotterdam, INABA Projects and C-LAB in New York City, and Barton Myers, Associates, Inc. in Los Angeles. He has taught introductory design as a Teaching Associate at Cornell University where he was also a co-editor of the Cornell Journal of Architecture. Most recently, Jeremy has been leading a multidisciplinary, regional design competition seeking ideas for rebuilding in the wake of Hurricane Sandy, and has been assisting Bjarke Ingels with instruction of a parallel-edition of Pritzker.

If you are interested in attending this event, please let us know so that I have some sense of numbers for food/beverage ordering. paulpettit@mt.edu

Friday, 04.26.19, 11:30 a.m. - 1:00 p.m.
RM9-450A

[WHAT, WHY, HOW]

COMPUTATIONAL DESIGN

This lecture introduces the fundamentals of computational design, being both theoretical and practical investigations into account it points out to established approaches and key resources and talks about how to develop a strong portfolio in the field of design and computation. The emerging role of computational design in both industry and academia will be discussed. Theoretical and emergent computational design and research work that has been developed in the fields of architectural design, product design, computational design research and teaching will be shown.

ONUR YÜCE GÜN, PhD
Architect Computational Design

Room 9-450
March 6, 2019
5-15PM

at the intersection of analog, media and computational design
of sound, on-screen, digital photography, kinetic elements

STUDIO MIT

DESIGN PORTFOLIO WORKSHOP

IDEO

Are you wondering what a design portfolio looks like? This is your opportunity to gain insight into what a design portfolio is and what your design portfolio might be.

Ben Patavaran from the Cambridge, MA, Office of IDEO will join us from 12:00 p.m. - 1:00 p.m., on Friday, 03.01.19 from 10-407) to talk about the value of IDEO and design portfolio strategies. Ben has also offered to stick around until 1:30 p.m. for questions and conversations.

If you are available and interested in attending this event, please let us know so that I have some sense of numbers for room size and food/beverage ordering. paulpettit@mt.edu

Lecturer:
BEN PATAVARAN

Friday, 03.01.19, 12:00 p.m. - 1:30 p.m.
RM 10-401

Perkins&Will

Curious about what Perkins&Will looks like in the portfolios of its interns & new hires? Matthew Pierce of Perkins&Will Boston will give us insight into the design and construction of a persuasive portfolio and talk to us about his journey from MIT March student to his current position as Associate Principal at Perkins&Will, Boston.

Matthew Pierce, March '04, AIA, LEED AP BD+C, PHUS, approaches his practice with a spirit of adventure that parallels his love of travel and the outdoors. Viewing each project as a unique opportunity for exploration and discovery, his novel approach responds to the specific qualities of a place and his clients' individual aspirations. He sees the design process as analogous to hiking in the mountains, propelled by his desire to find what lies around the next bend or the perspective offered from a distant peak. By undertaking new endeavors with this spirit of curiosity and discovery, Matt unlocks the potential to discover unforeseen possibilities.

Matt begins each project by constructing his individual narrative, developing a framework of experiences and ambitions for the client and the community that will guide the design team. He views architecture as a civic responsibility, and each project as an engaging and meaningful intersection that can transform a place and the experience of people.

ARCHITECTURE PORTFOLIO WORKSHOP w./

GRADUATE SCHOOL APPLICATION WORKSHOP

Are you currently applying, or thinking about applying, to architecture or design graduate school programs in the Spring?

Equally join Brandon Clifford, Director and Co-Founder of Master of Design, Associate Professor at MIT, and member of the MIT Architecture Graduate Programs Application Review Committee.

Virtually join current and former MIT students presenting and discussing their portfolios and graduate school application process. Presenting students will include: Calvin Zhong (MIT '18 U.S. Architecture Master First Year Master Student @ MIT), Elise Ja (MIT '20 U.S. Design Master First Year MDes Student @ Berkeley), Mackenzie Wang (U.S. Columbia University '20 U.S. Civil Engineering Master/Architecture Minor First Year March Student @ MIT), and Latta Albrecht (University of Bath '18 U.S. Architecture BS/Second Year March Student @ MIT).

November 12, 5:00 p.m. - 7:00 p.m. (EST)

(HASS) Concentrations

MIT provides a substantial and varied program in the humanities, arts, and social sciences that forms an essential part of the education of every undergraduate. This program is intended to ensure that students develop a broad understanding of human society, its traditions, and its institutions. The HASS requirement enables students to deepen their knowledge in a variety of cultural and disciplinary areas and encourages the development of sensibilities and skills vital to an effective and satisfying life as an individual, a professional, and a member of society.

The HASS Concentration is an integral part of the General Institute Requirements. The Department of Architecture offers two interrelated HASS concentrations

History of Architecture, Art and Design (HASS)

Minor Advisor — Kristel Smentek · 3-305G · smentek@mit.edu

Art, Culture and Technology (HASS)

Minor Advisor — Nida Sinnakrot · E15-213 · nidasinn@mit.edu

The HASS Concentration is comprised of three or four approved subjects in a single field. The Concentration field advisor helps interested students develop a program of related subjects and approves the proposal prior to submission to the Office of the HASS Requirement. It is expected that the proposal will be submitted prior to the start of the junior year.

In consultation with the Concentration Advisor, students develop a program of four related subjects to promote increased knowledge in that particular field.

History of Architecture, Art, & Design

Four subjects are required from two groups of study, three from Group 1 and one from Group 2

Group 1

History of Architecture and Design

- 4.603 Understanding Modern Architecture (FA, 12 units, HASS-A)
- 4.605 A Global History of Architecture (SP, 12 units, HASS-A)
- 4.606 Environmental Histories of Architecture (SP, 12 units, HASS-H)
- 4.609 Seminar in the History of Art and Architecture (SP, 12 units, HASS-A)
- 4.614 Building Islam (FA, 12 units, HASS-A)
- 4.622 Islamic Gardens and Geographies (SP, 12 units, HASS-A)
- 4.657, Design: The History of Making Things (SP, 12 units, HASS-A; CI-H)

History of Art

- 4.601 Introduction to Art History (FA, 12 units, HASS-A)
- 4.602 Modern Art and Mass Culture (SP, 12 units, HASS-A)
- 4.635 Early Modern Architecture and Art (FA, 12 units, HASS-A)
- 4.636 Topics in European Medieval Architecture and Art (FA, 12 units, HASS-A)
- 4.641 19th-Century Art: Painting in the Age of Steam (FA, 12 units, HASS-A)
- 4.651 Art Since 1940 (SP, 2 units, HASS-A)
- 4.674J French Photography (SP, 12 units, HASS-A; CI-H)

Group 2

Art, Culture & Technology

- One subject from Group 1 on the ACT Concentration list

Total for Concentration in History of Architecture, Art, and Design = 4 subjects

Art, Culture, & Technology Concentration

Four subjects are required from two groups of study, three from Group 1 and one from Group 2.

Group 1

Art, Culture & Technology

Introductory Subjects

- 4.301 Introduction to the Artistic Experimentation (FA&SP, 12 units, HASS-A)
- 4.302 Foundations in Art, Design & Spatial Practices (SP, 12 units, HASS-A; CI-M, preq., 4.021 or 4.02A)
- 4.320 Introduction to Sound Creations (FA, 12 units, HASS-A)
- 4.322 Introduction to 3D Art Work (FA, 12 units, HASS-A)
- 4.341 Introduction to Photography & Related Media (FA&SP, 12 units, HASS-A)
- 4.354 Introduction to Video and Related Media (FA&SP, 12 units, HASS-A)

Intermediate / Advanced Subjects

- 4.307 Art, Architecture, and Urbanism in Dialogue (FA, 12 units, HASS-A)
- 4.314 Advanced Workshop in Artistic Practice and Trans-disciplinary Research (FA, 12 units, HASS-A)
- 4.344 Advanced Photography and Related Media (FA&SP, 12 units, HASS-A)
- 4.352 Advanced Video and Related Media (FA&SP, 12 units, HASS-A)
- 4.356 Cinematic Migrations (SP, 12 units, HASS-A)
- 4.361 Performance Art Workshop (SP, 12 units, HASS-A)
- 4.368 Studio Seminar in Public Art / Public Space (SP, 12 units, HASS-A)
- 4.373 Advanced Projects in Visual Arts (SP, 12 units, HASS-A)

Group 2

History of Architecture, Art, and Design Concentration

- One subject from Group 1 on the History of Art Concentration list.

Total for Concentration in ACT = 4 Subjects

Research Opportunities

Undergraduate Research Opportunity Program (UROP)

The Department of Architecture has many Undergraduate Research Opportunity Program (UROP) projects, ranging from research in building technology (indoor air quality, building energy analysis, thermal comfort, ventilation systems) to computer graphics (visualization, image synthesis, computer-aided design) to architecture and art (public art projects, creating electronic media, museum installations).

UROP cultivates and supports research partnerships between MIT undergraduates and faculty - whether you join established research projects or pursue your own ideas. Projects occur during the academic year and/or in the summer session — lasting for an entire semester or continuing for a year or more.

By engaging in UROP, students have the opportunity to participate in each phase of research activity, from developing research plans, writing proposals, & conducting research, to analyzing data and presenting or publishing your results.

Students may begin a UROP any time during their academic career. Even though the semester may have already started, a UROP can start as soon as arrangements (applications, funding, registration) are complete. Although there are no universal starting dates, UROP projects are grouped into the following time periods: fall, IAP, spring and summer. UROP applications including a students research proposal are due by the applicable UROP deadline for the term/summer.

For more information, students can contact the UROP Office. Tips on how to secure a UROP can be found on the UROP website. Many students find success inquiring directly w./faculty in the Department they are interested in working with.

Course 4's UROP Coordinator is Larry Sass — 7-304 · lsass@mit.edu



International Opportunities

MIT International Science & Technology Initiatives (MISTI)

MISTI internships give students critical hands-on experience with the challenges of today's urban infrastructure, from design and sustainability to the complex issues raised by mega cities.

MISTI students pursue their interests in architecture, conservation, urban planning, transportation, and antiquities, through programs at universities, government institutes, and world-renowned firms around the world.

Rooted in the Mens et Manus tradition, MISTI matches MIT students with tailored internship, research opportunities abroad.

ETH/MIT Architecture Exchange (MISTI)

Each Fall, 2 undergraduate MIT Architecture majors have the option of studying at ETH Zurich for one semester, while 2 ETH undergraduate Architecture majors visit the Department of Architecture at MIT.

Undergraduates at the Swiss Institute of Technology's BSc program are immersed in the fundamentals on three fronts: design and construction, engineering disciplines and historical and social disciplines.

The architecture department affords access to many of ETH's vast resources, such as NCCR Digital Fabrication (a Swiss initiative to lead the world in digital architectural technologies and physical building processes) & the interdisciplinary ETH Wohnforum-ETH CASE research Centre, which studies the evolution of architecture within the context of the built environment, technological developments & social & cultural changes.





MIT Architecture & Design Social Media:

<https://www.facebook.com/MITDepartmentofArchitecture>

<https://twitter.com/MITarchitecture>

<https://www.instagram.com/mitarchitecture>

<https://www.instagram.com/designatmit>

MIT Undergraduate Admissions:

<https://mitadmissions.org>

The Department of Architecture

Adheres to MIT's Nondiscrimination Policy:

referencepubs.mit.edu/what-we-do/nondiscrimination-policy

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