

## Study Areas and Course Descriptions, 2016–2017

In course titles, *a* designates fall term, *b* designates spring term, and *c* designates summer. [Bracketed courses are not offered in 2016–2017.] The School reserves the right to change the prescribed course of study as necessary.

### DESIGN AND VISUALIZATION

Sunil Bald and John Eberhart, Study Area Coordinators

This study area encompasses required studios, elective advanced studios, and courses that concentrate on design logic and skills and that support design thinking and representation.

For the M.Arch. I program, required courses in this study area include a core sequence of four design studios, the first-year building project, two advanced studios, a course in formal analysis (1018a), and a four-stage sequence of courses that deal specifically with visualization methodologies. The core studio sequence progresses from spatially abstract exercises to more complex programs that require integrative thinking at various scales and situated on sites of increased complexity, while integrating ecological, landscape, and tectonic demands. In all four stages of the visualization sequence, hand, digital, 2-D, and 3-D methods are explored. The first course (1001c) of this visualization sequence is a summer course required for entering students who have not had significant prior architectural training. The next three courses (1015a, 1016b, and 1017c) – in the fall, spring, and early summer of the first year – are required of all M.Arch. I students.

For the M.Arch. II program, required courses in this study area include a core design studio (1061a), three advanced studios, and a course in computation analysis and fabrication (1062a).

#### *Required Courses*

**1001c, Visualization I: Observation and Representation** 0 credits. (Required of incoming M.Arch. I students with little or no academic background in architecture.) This summer course is an intensive, five-week immersion into the language of architectural representation and visualization, offering a shared inventory and basic framework upon which to build subsequent studies. Students are introduced to techniques and conventions for describing the space and substance of buildings and urban environments, including orthographic drawing, axonometric projection, perspective, architectural diagramming, vignette sketching, and physical modeling. Students work in freehand, hard-line, and digital formats. In parallel to the visualization portion of this course, an introduction to architectural history and theory focuses on principal turning points of thought and practice through to the eighteenth century. For 2016 the course will be taught from July 18 until August 19. Trattie Davies, coordinator; Miroslava Brooks, Kyle Dugdale

**1011a, Architectural Design** 6 credits. (Required of first-year M.Arch. I students.) This studio is the first of four core design studios where beginning students bring to the School a wide range of experience and background. Exercises introduce the complexity of architectural design by engaging problems that are limited in scale but not in the issues they provoke. Experiential, social, and material concerns are introduced together with formal and conceptual issues. Joyce Hsiang, coordinator; Brennan Buck, Trattie Davies, Eeva-Liisa Pelkonen, Michael Szivos

**1012b, Architectural Design** 6 credits. (Required of first-year M.Arch. I students.) This second core studio explores inhabitation through the design of the architecture and detail of enclosure, structure, circulation, and the habitable space it produces. The work of the term focuses on the simultaneous relationship of a body to both interior and exterior environments, and their mediation by the material assemblies of building. With an initial focus on the conception and production of a singular interior space, a sequence of projects gives way to increasing physical and spatial complexity by requiring students to investigate – at close range and in intimate detail – issues of structure and enclosure, organization and circulation, urban site and climate. This work forms the conceptual background for the work in the latter half of the term – the collaborative design and construction of the Building Project, an affordable house for a nonprofit developer in New Haven. Prerequisite: 1011a. Alan Organschi, coordinator; Andrew Benner, Peter de Bretteville, Adam Hopfner, Amy Lelyveld, Job Moore, Herbert Newman

**1013c, Building Project** 3 credits. (Required of first-year M.Arch. I students, early summer.) This course examines the materialization of a building, whereby students are required to physically participate in the construction of a structure that they have designed. By engaging in the act of making, students are exposed to the material, procedural, and technical demands that shape architecture. Construction documents are generated and subsequently put to the test in the field. Students engage in collaboration with each other, and with a client, as they reconcile budgetary, scheduling, and labor constraints, and negotiate myriad regulatory, political, and community agencies. The course seeks to demonstrate the multiplicity of forces that come to influence the execution of an architectural intention, all the while fostering an architecture of social responsibility, providing structures for an underserved and marginalized segment of the community. For 2015 students enrolled in this course are required to work on the project from May 2 through July 1. For more information, see the section on the Building Project on the Web: <http://architecture.yale.edu>. Prerequisites: 1011a, 1012b. Adam Hopfner, director; Kyle Bradley

**1015a, Visualization II: Form and Representation** 3 credits. (Required of first-year M.Arch. I students. No waivers allowed.) This course investigates drawing as a means of architectural communication and as a generative instrument of formal, spatial, and tectonic discovery. Principles of two- and three-dimensional geometry are extensively studied through a series of exercises that employ freehand and constructive techniques. Students work fluidly between manual drawing, computer drawing, and material construction. All exercises are designed to enhance the ability to visualize architectural form and volume three-dimensionally, understand its structural foundations, and provide tools that reinforce and inform the design process. Sunil Bald, Kent Bloomer

**1016b, Visualization III: Fabrication and Assembly** 3 credits. (Required of first-year M.Arch. I students. No waivers allowed.) This course provides an introduction to the key relationships that exist among methods of drawing, physical materials, technologies of construction, and three-dimensional form making. The material and formal sensibilities developed in 1015a, Visualization II, are mined to explore drawing as a tool leading to full-scale fabrication. The generation of form through both manual and digital methods is tested through materials and technologies of fabrication. Additive and subtractive processes, repetition and mass production, and building information modeling (BIM) are introduced as tools for assembly. “Assembly” is framed as both full-scale object and “three-dimensional” analog. Exercises and workshops provide students the opportunity to work physically with a wide variety of tools and materials as well as digitally with emerging computer-driven technologies. In this course conceived as a supplement to 1013b, Building Project, students integrate drawing and model-making to develop and propose a construction that can be experienced at the human scale and be understood as an integrated architectural element. Prerequisite: 1015a. Brennan Buck, John Eberhart

**1017c, Visualization IV: Processing and Presentation** 3 credits. (Required of first-year M.Arch. I students, early summer. No waivers allowed.) This seven-week, intensive course introduces Building Information Modeling (BIM) alongside manual drawing to expand each student’s analytical and expressive repertoire. Fundamental techniques are introduced through short exercises and workshops leading toward a sustained study of an exemplary precedent building. Quantitative analysis is pursued through both assembly modeling and visual dissection of both the programmatic spaces and functional elements. Observational and imaginative manual drawings allow for a reconstruction of the design process and reestablish the thought patterns that formed the building’s design priorities. These discoveries then are re-presented through interactive, multimedia presentations to describe the building assembly and its design ambitions. For 2016 the course will be taught from May 15 until June 30. Prerequisites: 1015a, 1016b. John Eberhart, John Blood

**1018a, Formal Analysis** 3 credits. (Required of first-year M.Arch. I students; available as an elective for M.Arch. II and M.E.D. students who obtain permission of the instructor.) This course studies the object of architecture – canonical buildings in the history of architecture – not through the lens of reaction and nostalgia but through a filter of contemporary thought. The emphasis is on learning how to see and to think architecture by a method that can be loosely called “formal analysis.” The analyses move through history and conclude with examples of high modernism and postmodernism. Reading assignments and one formal analysis are assigned each week. Peter Eisenman

**1021a, Architectural Design** 6 credits. (Required of second-year M.Arch. I students.) This third core studio concentrates on a medium-scale public building, focusing on the integration of composition, site, program, mass, and form in relation to structure, and methods of construction. Interior spaces are studied in detail. Large-scale models and drawings are developed to explore design issues. Prerequisites: 1011a, 1012b. Emily Abruzzo, coordinator; Peggy Deamer, Peter de Bretteville, Martin Finio, Tessa Kelly, M.J. Long, Joel Sanders

**1022b, Architectural Design** 6 credits. (Required of second-year M.Arch. I students.) This fourth core studio, an introduction to the planning and architecture of cities, concerns two distinct scales of operation: that of the neighborhood and that of the residential, institutional, and commercial building types that typically constitute the neighborhood. Issues of community, group form, infrastructure, and the public realm, as well as the formation of public space, blocks, streets, and squares are emphasized. The studio is organized to follow a distinct design methodology, which begins with the study of context and precedents. It postulates that new architecture can be made as a continuation and extension of normative urban structure and building typologies. Prerequisites: 1011a, 1012b, 1021a. Edward Mitchell, coordinator; Sunil Bald, Alexander Felson, Bimal Mendis, Alan Plattus, Rosalyne Shieh

**1061a, Post-Professional Design Studio** 9 credits. (Required of and limited to first-year M.Arch. II students.) This studio is specially designed for incoming post-professional students to introduce them to the School’s educational program and faculty. Each student is given the opportunity to examine in depth a sequence of design problems. Edward Mitchell, Aniket Shahane

**1062a, Computation Analysis Fabrication** 3 credits. (Required of and limited to first-year M.Arch. II students.) This course investigates and applies emerging computational theories and technologies through the design and fabrication of a full-scale building component and/or assembly. This investigation includes various static, parametric, and scripted modeling paradigms, computational-based structural and sustainability analysis, and digital fabrication technologies. Students work in pairs to design, analyze, and fabricate a full-scale constructed piece. John Eberhart

### *Advanced Design Studios (Fall)*

Advanced studios are limited in enrollment. Selection for studios is determined by lottery.

**1101a, Advanced Design Studio** 9 credits. Tod Williams and Billie Tsien, Davenport Visiting Professors

**1102a, Advanced Design Studio** 9 credits. James von Klemperer and Forth Bagley, Saarinen Visiting Professors; and Jonathan Emery, Bass Distinguished Visiting Architecture Fellow

**1103a, Advanced Design Studio** 9 credits. Peter Eisenman, Gwathmey Professor in Practice

**1104a, Advanced Design Studio** 9 credits. Marianne McKenna, Foster Visiting Professor

**1105a, Advanced Design Studio** 9 credits. Michael Young, Kahn Visiting Assistant Professor

**1106a, Advanced Design Studio** 9 credits. Alan Plattus

**1107a, Advanced Design Studio** 9 credits. Mark Foster Gage

### *Advanced Design Studios (Spring)*

Advanced studios are limited in enrollment. Selection for studios is determined by lottery.

**1111b, Advanced Design Studio** 9 credits. Pier Vittorio Aureli, Davenport Visiting Professor

**1112b, Advanced Design Studio** 9 credits. Francine Houben, Bishop Visiting Professor

**1113b, Advanced Design Studio** 9 credits. Thomas Phifer, Kahn Visiting Professor

**1114b, Advanced Design Studio** 9 credits. Patrick Bellew and Andy Bow, Saarinen Visiting Professors

**1115b, Advanced Design Studio** 9 credits. Tatiana Bilbao, Foster Visiting Professor

**1116b, Advanced Design Studio** 9 credits. Elizabeth Plater-Zyberk, Stern Visiting Professor

**1117b, Advanced Design Studio** 9 credits. David Erdman, Kahn Visiting Assistant Professor

**1118b, Advanced Design Studio** 9 credits. Keller Easterling

**1119b, Thesis** 9 credits. Proposals for the Thesis option must be submitted for review and approval by the Design and Rules Committees by the Friday of Jury Week for the preceding spring term. Proposals must include an abstract, a proposal, a bibliography, a proposed schedule and adviser, a methodology statement, and the student's current portfolio. Students with approved proposals can take an Independent Study with an instructor of choice in the fall term as thesis preparation. Keller Easterling, coordinator

### *Elective Courses*

**1211a, Drawing and Architectural Form** 3 credits. With the emergence of increasingly sophisticated digital technologies, the practice of architecture is undergoing the most comprehensive transformation in centuries. Drawing, historically the primary means of generation, presentation, and interrogation of design ideas, is currently ill-defined and under stress. This course examines the historical and theoretical development of descriptive geometry and perspective through the practice of rigorous constructed architectural drawings. The methods and concepts studied serve as a foundation for the development of drawings that consider the relationship between a drawing's production and its conceptual objectives. Weekly readings, discussions, and drawing exercises investigate the work of key figures in the development of orthographic and three-dimensional projection. Ultimately, the goal is to engage in a focused dialogue about the practice of drawing and different methods of spatial inquiry. Limited enrollment. Victor Agran

**1213b, Architecture and Books** 3 credits. For architects, the book has been a necessary (if not essential) tool for clarifying, extending, and promoting their ideas and projects. This seminar examines the phenomenon of the book in architecture as both an array of organizational techniques (what it is) and as a mediator (what it does). Arguably, outside of building itself, the book has been the preferred mode of discourse that architects have

chosen to express their intellectual project. Because lasting impression relies partially upon durability of message, the book remains the objet par excellence among media. This seminar is part lecture, part workshop where the experience of making a series of books helps to inform the development of ideas about the projective capacity of the book. Through case studies, the first portion of this seminar examines the relationship book production has with a selection of contemporary and historical practices, including each project's physical and conceptual composition as well as how each project acts as an agent of the architect within a larger world of communication. The second part of the seminar asks students to apply ideas in a series of three book projects that emphasize the book as an instrument of architectural thinking. Limited enrollment. Luke Bulman

**1216b, Ornament Theory and Design** 3 credits. This seminar begins by reviewing the major writings governing the identities of and distinctions between ornament and decoration in architecture, e.g., Owen Jones, Riegl, Sullivan, Beeby, etc. Twentieth-century modernist actions against ornament are also examined. After individual student analysis of Victorian, Art Nouveau, and Art Deco production, the focus is on ornament in twenty-first-century design. Readings, exercises, individual final projects, and a portfolio are required. Limited enrollment. Kent Bloomer

**1222b, Diagrammatic Analysis: Criticality after the Index** 3 credits. While formal analysis is sufficient to understand the genesis of historical buildings up until the French Revolution, that approach is no longer sufficient to understand the complexity of contemporary work, which, despite formal moments, introduces new relationships. This seminar is intended to explore analytic methods that provide an understanding of the complexities of current architectural production. This seminar focuses on historical projects, such as Piranesi's Campo Marzio, the modern architecture of Le Corbusier and Mies van der Rohe, and contemporary buildings by OMA/Rem Koolhaas, Herzog and de Meuron, Zaha Hadid, Alejandro Zaera-Polo, and others. Students are required to produce weekly drawings and participate in reading discussions. Limited enrollment. Peter Eisenman

[**1224b, The Chair** 3 credits. The chair has been a crucible for architectural ideas and their design throughout the trajectory of modern architecture. The chair is both a model for understanding architecture and a laboratory for the concise expression of idea, material, fabrication, and form. As individual as its authors, the chair provides a medium that is a controllable minimum structure, ripe for material and conceptual experiments. In this seminar, students develop their design and fabrication skills through exploration of the conceptual, aesthetic, and structural issues involved in the design and construction of a full-scale prototype chair. Limited enrollment. Not offered in 2016–2017. Timothy Newton]

**1226b, Site + Building** 3 credits. This seminar investigates buildings and their sites. Conceived as a vehicle for understanding the relationship between site and building through critical analysis, the course examines ancient, historic, and contemporary works of architecture and landscape architecture. Material includes works by Hadrian, Diocletian, Michelangelo, Raphael, Palladio, Durand, Schinkel, Lutyens, Asplund, Aalto, Wright, Mies, Kahn, Neutra, Saarinen, Scarpa, Bawa, Krier, Eisenman, Ando, and Gehry.

The seminar focuses on site organization strategies and philosophies of site manipulation in terms of topography; urban, suburban, and rural context; ecology; typology; spectacle; and other form-giving imperatives. Methods of site plan representation are also scrutinized. Requirements include three significant readings, one major class presentation, and the keeping of individual class notebooks. Limited enrollment. Steven Harris

**1227b, Drawing Projects** 3 credits. Each student admitted to the course comes prepared with a particular subject that is investigated through the media of drawing for the entire term. There is a weekly evening pin-up with group discussion of the work in progress. Limited enrollment. Turner Brooks

**1228b, Disheveled Geometries: Ruins and Ruination** 3 credits. Architectural ruins index the total failure of individual buildings, technologies, economies, or, at times, entire civilizations. This course researches the topics of ruination and architectural ruins—what produces them, what defines them, and how they impact individuals, cities, and civilizations on levels from the visual and formal to the philosophical and psychological. The formal and visual materials of this course emerge from the study of ruins from not only the past and present, but also the future, through research into the speculative territories of online “ruin porn,” new genres of art practice, and in particular dystopian television and film projects that reveal an intense contemporary cultural interest in apocalyptic themes. While significant nineteenth-century theories of architectural ruination, including those of John Ruskin (anti-restoration) and Eugène Emmanuel Viollet-le-Duc (pro-restoration), are addressed, the primary intellectual position of the course emerges from readings and discussions of the philosophical methodology of “ruination.” Student projects involve the philosophical and aesthetic ruination of iconic architectural projects to determine not only their essential qualities, but hidden, latent ones as well. Subsequent group discussion of this work vacillates between philosophical and aesthetic poles in an attempt to tease out new observations on these projects as well as on the nature of ruins and ruination. The self-designed final project is determined pending consultation between the students and instructor, but involves photorealistic failure of past, present, or future architectural or urban projects; dystopic visual speculations; fabrication experiments that test actual material decay and failure; or attempts to reproduce the aesthetic ambitions of ruin porn through the manipulation of existing, or the design of new, projects. The goal of the course is not to convey an existing body of architectural knowledge, but to unearth a new architectural discourse that considers architecture in reverse—emphasizing its decay rather than its creation in an effort to reveal new territories of architectural agency. Limited enrollment. Mark Foster Gage

**1230b, Patternism: Computation and Architectural Drawing** 3 credits. This seminar employs computational software to reexamine architectural drawing as traditionally understood: line-based representation that establishes spatial depth and tactility. The course begins by examining architectural drawing over the past forty years, particularly in relation to digital abstraction that stressed pattern rather than representation: coherent systems without physicality or character. Referencing the discourse of modern painting and sculpture, students are asked to formulate a thesis that responds to historical shifts they find between abstraction and physicality; between the flat graphic and the illusion of depth; and between distinct drawing types, such as perspectival and orthographic.

After establishing a conceptual foundation, the seminar focuses on exploiting the full potential of algorithmic software and the production of large architectural drawings. Limited enrollment. Brennan Buck

**1233a, Composition** 3 credits. This seminar addresses issues of architectural composition and form in four three-week exercises titled Form, Partis, Structure and Section, and Elevation. Leaving aside demands of program and site in order to concentrate on formal relationships at multiple scales, these exercises are intended to develop strategies by which words, briefs, written descriptions, or requirements can be translated into three dimensions. Each subject is introduced by a one-hour lecture on organizational paradigms in works of architecture from many periods. The medium is both physical and 3-D digital models. Multiple iterations emerging from the first week sketches and finalized in the following week are the basis for the generation of multiple, radically differing strategies, each with its own unique possibilities and consequences. Limited enrollment. Peter de Bretteville

**1239a, Theory through Objects** 3 credits. Since Alberti, architecture has been differentiated from building through its relationship to concepts, theories, and various aspects of metaphysical philosophy. Recent trends in the discipline, however, place these ideas in locations other than the final architectural “object.” Instead, they are lodged in processes—through diagrams, mappings, and scholarly intellectual practices distant from the actual act of design. Although this trajectory leaves the discipline of architecture fortified with informed intellectual content, it is left with few mechanisms that allow it to actually be manifest within the primary product of our discipline—form. This seminar reverses this process by using the design of actual forms and objects as a means to directly engage currently emerging developments in architectural theory and metaphysical philosophy. Ideas addressed include object-oriented ontology, weird realism, dark ecology, ontology, alien phenomenology, disruption theory, and the possibility of hyperobjects. As a background to this pursuit, students also study moments in recent architectural history when architectural theory, typically emerging from metaphysical philosophy, had a direct and tangible influence on the design of form. These moments, for instance, include the relationships between Jacques Derrida and Deconstruction, and Gilles Deleuze and Digital Formalism. This seminar relies heavily on group conversation about limited and focused readings, and speculative projects in which students test new theoretical directions through the design of objects. This course fulfills the History and Theory elective requirement with the addition of a fifteen-page paper intellectually positioning the translation of a student-selected theoretical ambition into a designed object. Limited enrollment. Mark Foster Gage

**1240a, Custom Crafted Components** 3 credits. This historically grounded, hands-on, project-based seminar requires individual aesthetic expression via the crafting of tangible, original, intimately scaled architectural elements. Exploration and experimentation with unusual combinations and sequences of analog and digital representation are encouraged by way of challenging preconception and expanding the spectrum of aesthetic expression. Selected iterations are developed into designs for specific building components and contexts. Relationships among creative liberty, craft, and manufacturing are explored via prototyping custom components using materials, means, and methods that are reasonable in contemporary professional practice. Limited enrollment. Kevin Rotheroe

**1241a, Rendered: Architecture and Contemporary Image Culture** 3 credits. This course addresses the role of image making in architecture at a time when consumers of culture, including architects, are inundated by images. While images can never replace the experience of a building in time and space, it is their potential to circulate so seamlessly that gives them undeniable power as our discipline's primary means of engagement with popular culture. The course questions their status as solely representational, a sign of some other, more "real," object. What is the relationship they construct between real and simulacrum? Can images produce alternate realities rather than simulate our own? Can they resist their own illusionary function? The course revolves around readings and discussion dealing with these questions, but also deals directly with techniques of image making. The final project is the production of a pair of large architectural images of a previous project. Limited enrollment. Students who have taken 1215a, Inner Worlds, are not eligible for this course. Brennan Buck

**1291c, Rome: Continuity and Change** 3 credits. (Open only to M.Arch. I second-year and M.Arch. II first-year students. Enrollment subject to the permission of the instructors and satisfactory completion of all required preparatory course work.) This intensive five-week summer workshop takes place in Rome and is designed to provide a broad overview of that city's major architectural sites, topography, and systems of urban organization. Examples from antiquity to the present day are studied as part of the context of an ever-changing city with its sequence of layered accretions. The seminar examines historical continuity and change as well as the ways in which and the reasons why some elements and approaches were maintained over time and others abandoned. Hand drawing is used as a primary tool of discovery during explorations of buildings, landscapes, and gardens, both within and outside the city. Students devote the final week to an intensive independent analysis of a building or place. M.Arch. I students are eligible to enroll in this course after completing at least three terms. This course does not fulfill either the History and Theory or the Urbanism and Landscape elective requirements. Limited enrollment. Bimal Mendis, coordinator; Miroslava Brooks, Brennan Buck, Joyce Hsiang, George Knight

**1299a or b, Independent Course Work** 3 or 6 credits. Program to be determined with a faculty adviser of the student's choice and submitted, with the endorsement of the study area coordinator, to the Rules Committee for confirmation of the student's eligibility under the rules. (See the School's *Academic Rules and Regulations*.)

The following courses offered elsewhere in the University may be taken for credit with permission of the instructor. Unless otherwise indicated, at the School of Architecture full-term courses are typically assigned 3 credits; half-term courses are assigned 1.5 credits.

**ART 110a, Sculpture Basics** The concepts of space, form, weight, mass, and design in sculpture are explored and applied through basic techniques of construction and material. Various techniques of gluing and fastening, mass/weight distribution, hanging/mounting, surface/finishing, and types of materials are addressed. In addition to the hands-on application of sculptural techniques, class time is spent looking at various concepts and approaches to the understanding and development of sculptural ideas,

from sculpture as a unified object to sculpture as fragmentary process. Selected readings complement the studio work. An introduction and orientation to the wood shop and metal facilities is covered. The shops and the classroom studio are available during days and evenings throughout the week. This course is recommended before advancement into ART 120a, 121b, 122a, or 125a. Enrollment limited to twelve. Lab/materials fee: \$75. Sandra Burns

**ART 111a or b, Visual Thinking** An introduction to the language of visual expression, using studio projects to explore the fundamental principles of visual art. Students acquire a working knowledge of visual syntax applicable to the study of art history and popular culture, as well as art. Projects address all four major concentrations (graphic design, painting/printmaking, photography, sculpture). No prior drawing experience necessary. Open to all undergraduates; *required of all art majors*. Lab/materials fee: \$25. Anna Betbeze and Anahita Vossoughi

**ART 114a or b, Basic Drawing** An introduction to drawing, emphasizing articulation of space and pictorial syntax. Class work is based on observational study. Assigned projects address fundamental technical and conceptual problems suggested by historical and recent artistic practice. No prior drawing experience necessary. Open to all undergraduates; *required of all art majors*. Lab/materials fee: \$25. Pedro Barbeito, Anna Betbeze, Munro Galloway, William Villalongo, Anahita Vossoughi, Natalie Westbrook, and faculty

**ART 116b, Color Practice** Students are introduced to the theory and practice of color through observation, experimentation, readings, screenings, discussion, and creative projects. We attempt to arrive at an understanding of color as an evolving scientific, philosophical, and cultural phenomenon. Students are encouraged to consider the role of color in historical and contemporary art practices and in relation to their own artistic development. Required of painting concentration art majors. Lab/materials fee: \$75. Anna Betbeze

**ART 120a, Introduction to Sculpture: Wood** An introduction to wood and woodworking technology through the use of hand tools and woodworking machines. Students are guided in the construction of singular objects and learn strategies for installing those objects in order to heighten the aesthetic properties of each work. Students discover both how an object works in space and how space works upon an object. Lab/materials fee: \$75. Faculty

**ART 121b, Introduction to Sculpture: Metal** An introduction to working with metal by examining the framework of cultural and architectural forms. A focus is the comprehensive application of construction in relation to concept. The class offers instruction in welding and general metal fabrication in order to create forms in response to current issues in contemporary sculpture. It also gives a solid foundation in learning how the meaning of work derives from materials and the form those materials take. Lab/materials fee: \$75. Brent Howard

**ART 122b, Introduction to Sculpture: Video** An intensive investigation of time-based works through such mediums as performance, video, installation, and sound. Emphasis placed on the integration and manipulation of mediums and materials to broaden the historical context. Critiques, readings, video screenings, and artist lectures consider how

the history of time-based works informs a contemporary practice. Frequent workshops complement the studio work. The shops and studios are available during class time and during days and evenings throughout the week. Enrollment limited. Lab/materials fee: \$150. Sandra Burns

**ART 125a, Introduction to Sculpture: Mold Making** This course offers instruction in the practical aspects of mold making and casting in a variety of materials and techniques. The objective is to provide students with the principles of this traditional technology and infuse these techniques into their practice and creation of sculpture. A foundation in how objects around us are reproduced is essential for the modern sculptor in a culture of mass production. Contemporary issues of art and culture are also discussed. Students are introduced to four major types of molding techniques: waste molds, piece molds, life casts, and flexible molds. Lab/materials fee: \$75. Carolyn Salas

**ART 130a or b, Painting Basics** A broad formal introduction to basic painting issues, including the study of composition, value, color, and pictorial space. Emphasis is on observational study. Class and individual assignments introduce students to the technical and historical issues central to the language of painting. Recommended for non-art majors. Lab/materials fee: \$75. Faculty

**ART 132a or b, Introductory Graphic Design** A studio introduction to visual communication with an emphasis on principles of the visual organization of design elements as a means to transmit meaning and values. Topics include shape, color, visual hierarchy, word/image relationships, typography, symbol design, and persuasion. Development of a verbal and visual vocabulary to discuss and critique the designed world and contribute significant projects to it. Lab/materials fee: \$150. Yeju Choi and Henk van Assen

**ART 265b, Typography II** Continued studies in typography incorporating more advanced and complex problems. Exploration of grid structures, sequentiality, and typographic translation, particularly in the design of contemporary books, and screen-based kinetic typography. Relevant issues of design history and theory are discussed in conjunction with studio assignments. Lab/materials fee: \$150. Prerequisites: ART 132a or b and ART 264a. Henk van Assen

**ART 301b, Critical Theory in the Studio** This course introduces students to key concepts in modern critical theory and examines how these ideas can aid in the analysis of creative work in the studio. Psychoanalysis, Marxism, feminism, structuralism, and poststructuralism are examined in relation to modern and contemporary movements in the visual arts, including cubism, surrealism, Arte Povera, pop, minimalism, conceptual art, performance art, the pictures group, and the current relational aesthetics movement. Lab/materials fee: \$25. Jonathan Weinberg

**ART 345a and 346b, Material Form and Fabrication** In this course students continue to work in response to assignments. These assignments are designed to provide further investigation into the history of making and thinking in sculpture and to raise questions pertinent to contemporary art. The opportunity exists to explore new techniques and materials while honing familiar skills. This course is designed to help students become self-directed in their work. Individual and group discussion, and visits to museums and

galleries, play a significant role. Enrollment limited to twelve. Lab/materials fee: \$75. Prerequisite: ART 120a, 121b, 122a, or equivalent, or permission of the instructor. Brent Howard and faculty

**ART 356a, Printmaking I** An introduction to intaglio (drypoint and etching), relief (woodcut), and screen printing (stencil), as well as the digital equivalents to each technique, including photo screen printing and laser etching and/or CNC milling. Students examine how these analog and digital techniques inform the outcome of the printed image as well as how they can be combined to create more complex narratives. The class culminates with the making of a unique object that integrates the above techniques and evades traditional definitions of printmaking. Lab/materials fee: \$150. Prerequisite: Art 114a or b or equivalent. Pedro Barbeito

**ART 368a, Intermediate Graphic Design** Various ways that design functions; how visual communication takes form and is recognized by an audience. Core issues inherent in design: word and image, structure, and sequence. Analysis and refinement of an individual design methodology. Attention to systematic procedures, techniques, and modes of inquiry that lead to a particular result. Lab/materials fee: \$150. Prerequisites: ART 132a or b and ART 264a, or permission of the instructor. Pamela Hovland

**CPSC 578b<sup>U</sup>, Computer Graphics** Introduction to the basic concepts of two- and three-dimensional computer graphics. Topics include affine and projective transformations, clipping and windowing, visual perception, scene modeling and animation, algorithms for visible surface determination, reflection models, illumination algorithms, and color theory. Holly Rushmeier

**DRAM 102a/b, Scene Design** An introduction for all non-design students to the aesthetics and the process of scenic design through critique and discussion of weekly projects. Emphasis is given to the examination of the text and the action of the play, the formulation of design ideas, the visual expression of the ideas, and especially the collaboration with directors and all other designers. Three hours a week. Open to nondepartmental and non-School of Drama students with prior permission of the instructor. Ming Cho Lee, Michael Yeorgan

**DRAM 229a, Theater Planning and Construction** This course is an introduction to planning, design, documentation, and construction of theaters, concert halls, and similar spaces. Emphasis is placed on the role of the theater consultant in functional planning and architectural design. The goal is to introduce the student to the field and provide a basic understanding of the processes and vocabulary of theater planning. Open to nondepartmental and non-School of Drama students with permission of the instructor. Eugene Leitermann

**F&ES 754a, Geospatial Software Design** This course introduces computer programming tools and techniques for the development and customization of geospatial data-processing capabilities. It relies heavily on use of the Python programming language in conjunction with ESRI's ArcGIS, Google's Earth Engine, and the open-source Quantum geographic information systems (GIS). Prerequisite: previous experience in GIS. Three hours lecture, problem sets. C. Dana Tomlin

**F&ES 755b, Modeling Geographic Space** An introduction to the conventions and capabilities of image-based (raster) geographic information systems (GIS) for the analysis and synthesis of spatial patterns and processes. In contrast to F&ES 756a, the course is oriented more toward the qualities of geographic space itself (e.g., proximity, density, or interspersed) than the discrete objects that may occupy such space (e.g., water bodies, land parcels, or structures). Three hours lecture, problem sets. No previous experience is required. C. Dana Tomlin

**F&ES 756a, Modeling Geographic Objects** This course offers a broad and practical introduction to the nature and use of drawing-based (vector) geographic information systems (GIS) for the preparation, interpretation, and presentation of digital cartographic data. In contrast to F&ES 755b, the course is oriented more toward discrete objects in geographical space (e.g., water bodies, land parcels, or structures) than the qualities of that space itself (e.g., proximity, density, or interspersed). Three hours lecture, problem sets. No previous experience is required. C. Dana Tomlin

**MGT 557b, Design and Marketing of New Products** Subrata K. Sen

## TECHNOLOGY AND PRACTICE

Michelle Addington and Kyoung Sun Moon, Study Area Coordinators

This study area explores fundamental theories and methods of building technologies and the relationships among these technologies, architectural design, and the larger natural environment. Courses examine materials, construction, structural systems, and the environmental technologies that provide healthy, productive, sustainable, and comfortable environments. This area also covers professional practice and examines the relationship between methods of construction, procurement, and management. Advanced courses investigate specific technical systems in greater detail, survey emerging methods and technologies, and explore the relationship between building technologies and architectural design in current practice and writings.

For the M.Arch. I program, requirements in this study area include six courses that survey common technical systems used in buildings and integrate the consideration of these technical systems into architectural design through a series of projects of increasing complexity. In addition, there is a required course on architectural practice.

### *Required Courses*

**2011a, Structures I** 3 credits. (Required of first-year M.Arch. I students.) An introduction to the analysis and design of building structural systems and the evolution and impact of these systems on architectural form. Lectures and homework assignments cover structural classifications, fundamental principles of mechanics, computational methods, and the behavior and case studies of truss, cable, arch, and simple framework systems. Discussion sections explore the applications of structural theory to the design of wood and steel systems for gravity loads through laboratory and computational exercises and design projects. Homework, design projects, and midterm and final examinations are required. Kyoung Sun Moon

**2012b, Structures II** 3 credits. (Required of first-year M.Arch. I students.) This course is a continuation of introductory analysis and design of building structural systems. The course introduces materials and design methods of timber, steel, and reinforced concrete. Structural behavior, ductility concepts, movement, and failure modes are emphasized. Geometric properties of structural shapes, resistances to stresses, serviceability, column analysis, stability, seismic, wind load, and lateral force resisting systems are presented. Homework involves calculations, descriptive analysis, and the building and testing of structural models. Midterm and final examinations are required. Prerequisite: 2011a. Kyoung Sun Moon

**2015b, Building Technology** 3 credits. (Required of first-year M.Arch. I students.) This course examines the role of material and procedure in the formation of architecture and the physical, logistical, and environmental constraints and demands that shape the processes of construction. In the first half of the term, a sequence of lectures surveys the conceptual concerns and technological factors of building: the origin and processing of the major classes of building materials; their physical properties, capacities, and vulnerabilities to physical and environmental stressors; the techniques used to work those materials; and the principles, procedures, and details of building assembly. Corresponding construction examples and case studies of mid-scale public buildings introduce students to the exigencies that so often influence decision making in the technical process and inflect (and potentially enrich) design intention—regulatory requirement, physical and environmental stress and constraint, procedural complication, labor and material availability and quality, energy consumption, and ecological impact. After spring recess and in coordination with the studio design phase of the Building Project, the course turns to the detailed study of light wood-frame construction. Five lectures with practical exercises track the stages of construction of the single-family house and supplement ongoing design development of the Building Project house. In both its direct technical application to the work in the studio and its exploration of more general themes in current construction practice, the course seeks to illuminate the ecological considerations as well as the materials, means, and methods that are fundamental to the conception and execution of contemporary building. Adam Hopfner, Alan Organschi

**2021a, Environmental Design** 3 credits. (Required of second-year M.Arch. I students.) This course examines the fundamental scientific principles governing the thermal, luminous, and acoustic environments of buildings, and introduces students to the methods and technologies for creating and controlling the interior environment. Beginning with an overview of the Laws of Thermodynamics and the principles of Heat Transfer, the course investigates the application of these principles in the determination of building behavior, and explores the design variables, including climate, for mitigating that behavior. The basic characteristics of HVAC systems are discussed, as are alternative systems such as natural ventilation. The second half of the term draws on the basic laws of physics for optics and sound and examines the application of these laws in creating the visual and auditory environments of a building. Material properties are explored in detail, and students are exposed to the various technologies for producing and controlling light, from daylighting to fiber optics. The overarching premise of the course is that the understanding and application of the physical principles by the architect must respond

to and address the larger issues surrounding energy and the environment at multiple scales and in domains beyond a single building. The course is presented in a lecture format. Homework, computational labs, design projects, short quizzes, and a final exam are required. Michelle Addington

**2022b, Systems Integration and Development in Design** 3 credits. (Required of second-year M.Arch. I students.) This course is an integrated workshop and lecture series in which students develop the technical systems of preliminary design proposals from earlier studio work. The careful advancement of structural form and detail, environmental systems, and envelope design, as well as an understanding of the constructive processes from which a building emerges, are all approached systematically, as elements of design used not only to achieve technical and performance goals but also to reinforce and re-inform the conceptual origins of the work. The workshop is complemented by a series of lectures from leading structural, environmental, and envelope consultants. Detailed technical drawings and analyses, along with the use of BIM software, are required. Prerequisites: 1021a, 2011a, 2012b, 2015b, 2021a. Martin Finio, coordinator; Victoria Arbitrio, Anibal Bellomio, Erleen Hatfield, Robert Haughney, Kristin Hawkins, John Jacobson, Laurence Jones, Laura Pirie, Victoria Ponce de Leon, Craig Razza, Edward M. Stanley, Philip Steiner, Adam Trojanowski

**2031a, Architectural Practice and Management** 3 credits. (Required of third-year M.Arch. I students. No waivers allowed. Available as an elective for M.Arch.II students who obtain permission of the instructor.) The process by which an architectural design becomes a building requires the architect to control many variables beyond the purely aesthetic, and understanding how to control that process is key to successful practice. This course provides an understanding of the fundamentals of the structure and organization of the profession and the mechanisms and systems within which it works as well as the organization, management, and execution of architectural projects. Lectures explore the role and function of the architect, the legal environment, models of practice and office operations, fees and compensation, project delivery models and technology, and project management in the context of the evolution of architectural practice in the delivery of buildings. Phillip Bernstein

### *Elective Courses*

**2211a, Structures and Facades for Tall Buildings** 3 credits. This seminar investigates the dynamic interrelationship between technology and architecture in tall buildings. Among the various technologies involved, emphasis is placed on structural and facade systems, recognizing the significance of these systems, the separation of which in terms of their function led to modern architecture, and allowed the emergence of tall buildings. This seminar reviews contemporary design practice of tall buildings through a series of lectures and case study analyses. While most representative structural and facade systems for tall buildings are studied, particular emphasis is placed on more recent trends such as diagrid structures and double-skin facades. Further, this seminar investigates emerging technologies for tall buildings and explores their architectural potentials. Finally, this course culminates in a tall building design project and presentation. Limited enrollment. Kyoung Sun Moon

**2212b, The Liquid Threshold between Order and Chaos** 3 credits. This seminar explores the design of complex three-dimensional structural systems. Through discussions on existing projects, including some of the instructors' own, and also modeling and testing new systems to destruction, both physically and digitally (using tools such as Karamba 3D), the seminar intends to foster a deeper intuitive understanding of structures. At what point do you know a structure is at its limit? Limited enrollment. Neil Thomas, Aran Chadwick

[**2216b, Materials and Meaning** 3 credits. This seminar urges students to probe material usage, in terms of detailing, context, embedded meaning, and historical precedent. The course examines how variations in joinery affect a built work, what opportunities materials afford architects in design and construction, how architects make material selections and decisions, and what meanings material selections bring to a work of architecture. Weekly readings, one class presentation, two projects, and active participation in class discussions are required. Limited enrollment. Not offered in 2016–2017. Deborah Berke]

[**2218b, Smart Materials** 3 credits. This seminar explores the basic characteristics and families of smart materials, with a special focus on materials and technologies that have a relationship to vision. The course examines, in depth, materials and technologies such as LEDs, smart glazing, displays, and interactive surfaces, and explores some of the contemporary experiments taking place in the architectural profession. Each student is required to coherently discuss material fundamentals and comprehensively analyze current applications. The course culminates with each student focusing on a material characteristic with which to explore different means of technology transfer in order to begin to invent unprecedented approaches. There are several exploratory assignments and a final design experiment. Limited enrollment. Not offered in 2016–2017. Michelle Addington]

**2219b, Craft, Materials, and Digital Artistry** 3 credits. This course reviews materials and manufacturing processes especially suited for digitally crafting aesthetically unique architectural components and surfaces. Cross-fertilization of digital and conventional modes of making is emphasized, as this approach often enables economically viable opportunities for creative expression. This is a hands-on, project-based seminar addressing fundamental theoretical issues in the transformation of ideas into material reality via representations, hand-operated tools, and CNC-automated forming devices. Limited enrollment. Kevin Rotheroe

**2220a, Studies in Light and Materials** 3 credits. This seminar provides an overview of the basic characteristics and families of “phenomenological” materials, with a special focus on materials and technologies that have a relationship to light and vision. Materials and technologies, such as LEDs, smart glazing, displays, and interactive surfaces, are examined in depth, and some of the contemporary experiments taking place in the architecture profession are explored. Throughout the term, students catalog relevant properties and begin to develop a mapping between behaviors and phenomena. Students have the opportunity to interact with some of the well-known architects who are at the heart of the current experimentation. Each student learns how to coherently discuss material fundamentals and comprehensively analyze current applications. The seminar culminates with each student focusing on a material characteristic with which to explore different

means of technology transfer in order to begin to invent unprecedented approaches and applications. Limited enrollment. Michelle Addington

**2226b, Design Computation** 3 credits. The capabilities and limitations of architects' tools influence directly the spaces architects design. Computational machines, tools once considered only more efficient versions of paper-based media, have a demonstrated potential beyond mere imitation. This potential is revealed through design computation, the creative application of the processes and reasoning underlying all digital technology, from e-mail to artificial intelligence. Just as geometry is fundamental to drawing, computation affords a fundamental understanding of how data works, which is essential to advance the development of BIM, performative design, and other emerging methodologies. This seminar introduces design computation as a means to enable architects to operate exempt from limitations of generalized commercial software; to devise problem-specific tools, techniques, and workflows; to control the growing complexities of contemporary architectural design; and to explore forms generated only by computation itself. Topics include data manipulation and translation, algorithms, information visualization, computational geometry, human-computer interaction, custom tooling, generative form-finding, emergent behavior, simulation, and system modeling. Using Processing, students develop computational toolsets and models through short, directed assignments ultimately comprising a unified, term-long project. Limited enrollment. Michael Szivos

**2230b, Exploring New Value in Design Practice** 3 credits. How do we make design a more profitable practice? Design business has traditionally positioned *building as a commodity* in the delivery supply chain, valued by clients like other products and services purchased at lowest first cost. Despite the fact that the building sector in its entirety operates in large capital pools where significant value is created, intense market competition, sole focus on differentiation by design quality, and lack of innovation in project delivery and business models have resulted in a profession that is grossly underpaid and marginally profitable. The profession must explore new techniques for correlating the real value of an architect's services to clients and thereby break the downward pressure on design compensation. This seminar redesigns the value proposition of architecture practice, explores strategies used by better-compensated adjacent professions and markets, and investigates methods by which architects can deliver—and be paid for—the value they bring to the building industry. Prerequisite: 2031a or equivalent strongly recommended. Limited enrollment. Phillip Bernstein, John Apicella

**2233b, Strange Forms in Strange Relationships** 3 credits. From simple cartoons to the intricacies of kitbashing, architectural form is in flux between extremes of simplicity and complexity. These extreme states leave significant room to uncover new in-between territories for architecture, as its formal options have never been so great, or so widely accepted. This course investigates contemporary strategies and techniques through physical experimentation, for developing innovative new languages that capitalize on these extremes. Precedents that similarly exhibit a curious and strange take on their historic architectural context are tracked throughout history and mined for the architectural qualities they produce. Associations that are derived from qualities of scale, posture, color, silhouette, and material are analyzed and cataloged in order to develop a lexicon of what might define an emerging formal direction in architecture. The course combines lectures,

discussions, and demonstrations of key modeling techniques and strategies necessary for exploring the topic. The readings and lectures provide the key theoretical and cultural arguments around experimental work of the past two decades. To understand the current moment, lineages of work are established charting strangeness within architecture's long history as well as its recent past. Software knowledge is not a prerequisite, as the tools and programs are taught extensively throughout the course, along with the conceptual and historic content. Students explore particularly innovative modeling techniques in Rhino, Maya, NCloth, and ZBrush, which facilitate a number of strategies for the explorations of the course. Software and fabrication are used as generative tools to explore concepts rather than merely output representation. The final deliverable is a small-scale fabrication project that exhibits the new architectural qualities discovered in the course. Limited enrollment. Nathan Hume

**2299a or b, Independent Course Work** 3 or 6 credits. Program to be determined with a faculty adviser of the student's choice and submitted, with the endorsement of the study area coordinators, to the Rules Committee for confirmation of the student's eligibility under the rules. (See the School's *Academic Rules and Regulations*.)

The following courses offered elsewhere in the University may be taken for credit with permission of the instructor. Unless otherwise indicated, at the School of Architecture full-term courses are typically assigned 3 credits; half-term courses are assigned 1.5 credits.

**ENAS 660b<sup>U</sup>/F&ES 885b, Green Engineering and Sustainability** This hands-on course highlights the key approaches to advancing sustainability through engineering design. The class begins with discussions on sustainability, metrics, general design processes, and challenges to sustainability. The current approach to design, manufacturing, and disposal is discussed in the context of examples and case studies from various sectors. This provides a basis for what and how to consider when designing products, processes, and systems to contribute to furthering sustainability. The fundamental engineering design topics to be addressed include toxicity and benign alternatives, pollution prevention and source reduction, separations and disassembly, material and energy efficiencies and flows, systems analysis, biomimicry, and life cycle design, management, and analysis. Students tackle current engineering and product design challenges in a series of class exercises and a final design project. Julie Zimmerman

**F&ES 894a, Green Building: Issues and Perspectives** Our built environment shapes the planet, our communities, and each of us. Green building seeks to minimize environmental impacts, strengthen the fabric of our cities and towns, and make our work and home lives more productive and fulfilling. This course is an applied course, exploring both the technical and the social-business-political aspects of buildings. Topics range from building science (hygrothermal performance of building enclosures) to indoor environmental quality; from product certifications to resilience (robust buildings and communities in the face of disasters and extended service outages). The purpose of this course is to build a solid background in the processes and issues related to green buildings, equipping students with practical knowledge about the built environment. Extensive use is made of resources from BuildingGreen, Inc., one of the leading information companies

supporting green building and green building professionals. The course is primarily a lecture-discussion one with some fieldwork, substantial emphasis on research and group project work, and online individual testing. The course is strengthened by several guest lectures by leading green building professionals from across the country and across many disciplines: from architecture to material science, from engineering to green building business. The class meets once a week, with the instructor available to students during that same day. Enrollment limited to twenty-four. Peter Yost

**F&ES 895a, Green Building Intensive: How Buildings Work** This course is designed to introduce students, through hands-on experience and site visits, to how buildings work: their design, their materials selections, their construction, and their operation. Content includes: (1) history of building design and construction; (2) professions and skills involved in the design and construction of buildings; (3) components and functions of buildings; (4) the science behind building performance; and (5) green certification programs. This course is a standalone half-term lab/practical course that is designed to also be a companion course with F&ES 894a. F&ES 895a can be taken prior to, with, or after F&ES 894a. Enrollment limited to twelve. Peter Yost

## HISTORY AND THEORY

Keller Easterling and Eeva-Liisa Pelkonen, Study Area Coordinators

This study area explores the relationship between design, history, and theory through a broad range of courses in which the analysis of buildings, cities, landscapes, and texts supports the articulation and criticism of fundamental concepts, methods, and issues. Historical and contemporary projects and writings are studied in context and as part of the theoretical discourse of architecture.

For entering M.Arch. I students who have not had significant prior architectural training, the pre-first-year visualization course (1001c) includes a broad survey of Western architectural history to the nineteenth century. For all M.Arch. I students, there is a first-year required survey course of nineteenth- and twentieth-century architectural history (3011a) followed in the second year by two required courses on architectural theory (3021a and 3022b).

In addition, M.Arch. I students must satisfactorily complete two elective courses from this study area that require at least a fifteen-page research paper. With the exception of courses in which a student elects to do a project in lieu of a research paper, or courses whose descriptions specifically indicate that they do not fulfill the History and Theory elective requirement, all elective courses in this study area fulfill this requirement. Provided a fifteen-page research paper is required, the elective courses 1239a, 4216a, 4222a, 4223b, and 4231b also fulfill this History and Theory elective requirement, although those listed from the Urbanism and Landscape study area cannot be used to satisfy both the History and Theory and the Urbanism and Landscape elective requirements. Courses in other study areas as well as courses offered at the University outside of the School of Architecture that include a research paper and cover an architectural history and theory topic may fulfill the History and Theory elective requirement provided a student requests and receives permission from one of the History and Theory study area coordinators

qualifying that course to fulfill the requirement. One of the two required History and Theory electives should be in a non-Western subject.

For the M.Arch. II program, there is a second-year required course dealing with issues of architecture and urbanism (3071a).

## Required Courses

**3011a, Modern Architecture** 3 credits. (Required of first-year M.Arch. I students; available as an elective for M.Arch. II and M.E.D. students.) The course embraces the last century and a half's history of architecture, when traditional fables began to yield to more scientifically conceived ideas of architecture's role in the creation of civilizations. As architecture gained importance in advancing social and industrial agendas, it also built a basis for theoretical reflection and visionary aesthetics. The expanding print and media culture accelerated the migration of ideas and propelled architecture beyond its traditional confines. Discussion of major centers of urban culture and their characteristic buildings alternates with attention to individual concepts and their impact in an increasingly interconnected culture of design. Kurt W. Forster

**3021a, Architectural Theory I: 1750–1968** 3 credits. (Required of second-year M.Arch. I students; available as an elective for M.Arch. II and M.E.D. students.) History of Western architectural theory, 1750–1968, through the close reading of primary texts. Lectures place the readings in the context of architectural history; the texts are discussed in required discussion sections. Topics include discussions of theories of origin and character, the picturesque, debates regarding style, historicism, and eclecticism, Gothic Revival, questions of ornament, architectural modernism, functionalism, and critiques of modernism. Marta Caldeira

**3022b, Architectural Theory II: 1968–Present** 3 credits. (Required of second-year M.Arch. I students; and of first-year M.Arch. II and M.E.D. students.) This course is a survey of theoretical and critical literature on contemporary architecture. It explores the texts of postmodernism, post-structuralism, and critical and post-critical discourses, as well as current debates in globalization, post-humanism, and environmentalism in the architectural discipline from 1968 to the present. Prerequisite for M.Arch. I: 3021a. Anthony Vidler

**3071a, Issues in Architecture and Urbanism** 3 credits. (Required of and limited to second-year M.Arch. II students.) Current issues in architecture and urbanism, explored through seminars and case studies introducing methods and theories of architectural research. Edward Mitchell

**3091a, Methods and Research Workshop** 3 credits. (Required of and limited to first-year M.E.D. students.) This course introduces students to methods of architectural writing and research, laying the groundwork for an advanced research project. By investigating various text genres, such as surveys, journalism, manifestos, scholarly essays, critical essays, and narratives, this course studies ways of writing about architecture, urbanism, and the environment. Recent debates concerning the relationship between architectural history and theory and the questions about disciplinary and interdisciplinary boundaries are explored. Working toward a substantial research paper requirement, students

are introduced to hands-on research through a series of library and archival workshops. Limited enrollment. Eeva-Liisa Pelkonen

**3092a or b, Independent M.E.D. Research** 3–6 credits first year, fall term; variable credits remaining terms, determined in consultation with the director of M.E.D. Studies. (Required of and limited to M.E.D. students in each term.) The proposal submitted with the admissions application is the basis for each student’s study plan, which is developed in consultation with faculty advisers. Independent research is undertaken for credit each term, under the direction of a principal adviser, for preparation and completion of a written thesis. The thesis, which details and summarizes the independent research, is to be completed for approval by the M.E.D. committee by the end of the fourth term. M.E.D. faculty

### *Elective Courses*

**[3213b, Architecture and Capitalism** 3 credits. This seminar examines the relationship between capitalism and architecture from both a theoretical perspective—Marxism’s/neo-Marxism’s critique of culture, art, and architecture—and from an architectural perspective—architecture’s participation in, resistance to, and speculation about capitalism. The course examines different periods of architectural history from the perspective of theorists and what they had to say about cultural/architectural production and from the perspective of architects and what they had to say about their role in capitalism. The theorists examined include Marx, Ruskin, Simmel, thinkers of the Frankfurt School, Tafuri, Jameson, Slavoj Žižek, Naomi Klein, while the architects include Morris, Muthesius, Gropius, Hilberseimer, Peter Eisenman, Rem Koolhaas. Each week an initial 45-minute lecture by the professor is followed by in-class presentations and discussion by the students. A fifteen-page paper is required at the end of the term. Limited enrollment. Not offered in 2016–2017. Peggy Deamer]

**3214b, The Construction of Exactitude: Classicism and Modernism** 3 credits. This seminar examines the theme of exactitude as a design and constructional theoretical method in the creative processes of seminal architects over the past one hundred years. Conceived to readdress the concept of the *classical* in architectural thought and practice (understood not as style but as a rational process of distillation, clarity, economy, and syntax), the seminar emphasizes how *fundamentals* derived from this mode (unity, composition, proportion) have shaped the work of leading modern architects. Concepts addressed are the universal, the tectonic, permanence, cultural continuity, and the vocation of the architect. Representative practices are contrasted with other methodological modes that stem from the organic, the decorative, the parametric, and the local. Works studied include those by architects, historians, literary/artistic figures, and theorists such as Perret, Garnier, Le Corbusier, Valéry, Nietzsche, Said, Calvino, Mies, Scully, Niemeyer, Kahn, Vidler, Frampton, and Eisenman. Limited enrollment. Karla Britton

**3216a, Case Studies in Architectural Criticism** 3 credits. This seminar concentrates on issues that influence the way modern buildings and their architects are perceived by critics, scholars, and the public. The careers of such architects as Frank Lloyd Wright, Eero Saarinen, Louis Kahn, Philip Johnson, Robert Venturi, and Frank Gehry provide a framework for the examination of how patronage, fashion, social change, theory,

finance, and politics affect the place of prominent designers and their work in the historical record. Readings include such critics as Lewis Mumford, Ada Louise Huxtable, Blair Kamin, Christopher Hawthorne, and Michael Kimmelman. Responding to lectures by the instructor and visitors, students develop criteria for judging architectural quality (program, site, “message,” details, etc.), and then apply those criteria in three brief analytical papers that build toward a 2,500-word research paper investigating the elements that contributed to the “success,” “failure,” or “reevaluation” of an individual building, an architect’s career, or a body of architectural work. All written assignments are reviewed in individual conferences with the instructor. Limited enrollment. Carter Wiseman

**3217b, Writing on Architecture** 3 credits. The goal of this course is to train students in the principles and techniques of nonfiction writing as it applies to architecture. The course includes readings from the work of prominent architects, critics, and literary figures, as well as reviews of books and exhibitions, opinion pieces, and formal presentations of buildings and projects. Class writing includes the development of an architectural firm’s mission statement, drafting proposals for design commissions, Web texts, and other forms of professional communication. The main focus of the course is an extended paper on a building selected from a variety of types and historical periods, such as skyscrapers, private houses, industrial plants, gated communities, malls, institutional buildings, and athletic facilities. Limited enrollment. Carter Wiseman

**3220b, Contemporary Architectural Discourse Colloquium** 3 credits. Organized by second-year M.E.D. students in collaboration with the director of the M.E.D. program, this year’s colloquium, entitled “Spatial Metaphors,” surveys spatial tropes drawn from fields that converge architecture, geometry, psychology, and geography. Spatial concepts developed by Gilles Deleuze (the fold and becoming), Bernard Cache (architecture and geometry), and Peter Sloterdijk (spheres and multivalency) are studied alongside texts from an interdisciplinary field that includes Russell West-Pavlov’s studies of intersection of space, literature, and philosophy; Victor Turner’s notion of ritual and liminality; as well as Richard Schechner’s ideas about performance and subjunctivity. The course attempts to reconcile these theories of space with their myriad realities to contemplate the reflexive relationships between the production of behaviors, events, and spaces. Limited enrollment. Eeva-Liisa Pelkonen

**[3223a, Parallel Moderns: Toward a New Synthesis?** 3 credits. This seminar puts forward the argument that what many have accepted as the mutually exclusive discourses of tradition and innovation in the modern architecture of the first half of the twentieth century—respectively identified as the “New Tradition” and the “New Pioneers” by Henry-Russell Hitchcock in his *Modern Architecture: Romanticism and Reintegration* (1929)—in fact share common genealogy and are integral to an understanding of modern architecture as a whole. The seminar explores in depth key architects working in the “New Tradition” and goes on to explore its impact for postmodernism in the 1970s and 1980s. The possible emergence of a new synthesis of seeming opposites in the present is also considered. Limited enrollment. Not offered in 2016–2017. Robert A.M. Stern]

**3225b, Religion and Modern Architecture** 3 credits. This seminar offers a fresh theoretical reading of the history of modern architecture through the lens of realized religious buildings and sites. Intended to address how expressions of the ineffable are

implemented materially and conceptually in a variety of cultural and urban contexts, the course is structured around a close comparative examination of pairs of iconic religious projects from 1921 to the present—temples, memorials, cemeteries, synagogues, monasteries, mosques, and churches. The comparisons probe issues of building type, spatial organization and circulation, material and structure, detailing and ornamentation, as well as philosophical, sociological, and cultural contexts. Students then deliver in-depth analyses of projects related to their own research interests for discussion and critique, and complete a graphic and written analytical record. This interdisciplinary and interactive course also draws guests from related fields to address such questions as: How can the concept of the “sacred” be understood in the twenty-first century, if at all? In what contexts is it intelligible? In a pluralist society, in which the spiritual is often experienced individually, how can architecture express communal identity or tradition? Architects discussed include Le Corbusier, Perret, Wright, Kahn, Breuer, Schwarz, Barragán, Niemeyer, Fathy, and Ando. Limited enrollment. Karla Britton

**3230a, Universals** 3 credits. The seminar explores the pleasures, perils, and potential productivity of architecture’s love affair with, or faith in, systems of standards. From the belief that the proper combinations of geometry would actually generate transcendence in ecclesiastical architecture, to the various adoptions of a neoclassical language for the redemption of buildings or cities, to the modular systems that would allow modernism to rewrite the world, to the hidden mysteries of ISO’s (International Organization for Standardization) supposedly rationalizing decisions, episodes in the alchemy of standards feature many architectural disciples. This seminar studies the ways in which the desire for standards has created isomorphic aesthetic regimes as well as productive renovations of construction and assembly. The seminar also explores the more expansive organs of decision-making that overwhelm and dictate to the architectural discipline, trumping the internal theories of design society with universal standards of much more consequence. While the seminar revisits familiar architectural theory, it also visits some less-familiar episodes such as Eiffel’s prefabricated cathedrals designed for distant French colonies, the origin of Sweets Catalog, the context of Konrad Wachsmann’s modular systems, or ISO’s control over everything from credit card thickness to construction industry protocols. As a true seminar, the first meetings are structured around collective readings and discussions, and the final meetings focus on individual research topics. Limited enrollment. Keller Easterling

**[3237b, Human/Nature: Architecture, Landscape, Technology** 3 credits. Our global environmental crisis poses the challenge of devising a new model of ecologically responsible interdisciplinary practice that brings together two disciplines—architecture and landscape architecture—that have been professionally segregated at least since the nineteenth century. The first half of the term looks at this issue from a cultural and historical perspective, tracing the ideological origins of the architecture/landscape divide to another Western polarity—the false opposition between nature and culture, human and non-human—dualisms that are deeply rooted in Western literature, philosophy, popular culture, and even notions of gender and sexuality. The seminar explores how this way of thinking has impacted design practices in America from Frederick Law Olmsted in the mid-nineteenth century to Ian McHarg and Robert Smithson in the 1960s and 1970s. During the second half of the term the focus shifts to consider contemporary trends,

examining the work of a diverse group of architects, landscape architects, and artists who have been undertaking groundbreaking projects that dissolve traditional distinctions between building and environment. Three converging design directions that unite this otherwise heterogeneous group—topography, bio-computation, and ecology—are identified, and the affinities and differences between them are discussed. Limited enrollment. Not offered in 2016–2017. Joel Sanders]

**3239b, Launch: Architecture and Entrepreneurialism** 3 credits. This seminar studies the designer as entrepreneur. Contemporary entrepreneurs usually understand not only how to capitalize a business but also how to play market networks with the viral dissemination of both objects and aesthetic regimes. While the architecture profession has absorbed many of the technologies that markets use in their population thinking, practice is nevertheless structured to support architecture conceived as singular creations. This seminar considers both historical and contemporary moments in architectural and urban design when architects conceived of buildings, building components, or formats as repeatable products—products that, in the aggregate, may have the power to create an alteration to a local or global environment. Each week, the seminar considers the work of two or three architects together with texts that provide critical and theoretical inflection. The final project is a business/design-plan wherein students serve as each other’s publicists. The architects/firms considered in the first portion of the course include Burnham and Root; Alvar Aalto; McKim, Mead & White; John Nolen; Thonet designers; the RPAA (MacKaye, Stein, Wright, Bing, Mumford, Whitaker, Chase); Jean Prouvé; Victor Gruen; Morris Lapidus; Charles and Ray Eames; Case Study Houses; Buckminster Fuller; Cedric Price; Archigram; and Emilio Ambasz. In the second portion of the course, a growing number of contemporary examples, such as Chuck Hoberman, SHoP, TED designers, Kieran Timberlake, and Jürgen Mayer, are examined. Limited enrollment. Keller Easterling

**[3240a, Spatial Concepts of Japan: Their Origins and Development in Architecture and Urbanism** 3 credits. The seminar explores the origins and developments of Japanese spatial concepts and surveys how they help form the contemporary architecture, ways of life, and cities of the country. Many Japanese spatial concepts, such as *MA*, are about creating time-space distances and relationship between objects, people, space, and experiences. These concepts go beyond the fabric of a built structure, and encompass architecture, landscape, and city. Each class is designed around one or two Japanese words that signify particular design concepts. Each week, a lecture on the word(s) with its design features, backgrounds, historical examples, and contemporary application is followed by student discussion. Contemporary works studied include those by Maki, Isozaki, Ando, Ito, SANAA, and Fujimoto. The urbanism and landscape of Tokyo and Kyoto are discussed. Students are required to make in-class presentations and write a final paper. Limited enrollment. Not offered in 2016–2017. Yoko Kawai]

**[3245a, Architecture and Utopia** 3 credits. This seminar examines the odd coupling of architecture and utopia: while utopias are properly imaginable, they architecturally occupy “no place”; while utopian thought demands social suppleness, architecture fixes people and places; while utopian philosophy is entirely speculative, architecture demands formal precision. What unites them is their shared occupation with power: they both

satisfy the need for their originator to tell people how to live. The seminar also examines the very diverse ways in which utopias have been historically conceived, both in relation to what they are critiquing – social disorder and despotism, industrial degradation, capitalist hegemony – and in relation to how they are evaluated: Tafuri’s scathing critique versus Jameson’s admiration, for example. The first part of the seminar examines the historical, architectural projects that constitute our understanding and definition of “utopia.” The second part is devoted to contemporary examinations of the concept of utopia: texts and projects that extend the debate about the validity of the term in an age of globalization, technocracy, and virtuality. Students are asked to do weekly readings with written responses; an in-class presentation; and a fifteen-page paper elaborating on the presentation topic. Not offered in 2016–2017. Peggy Deamer]

[3253b, **Critical Theory: Culture, Art, and Architecture** 3 credits. This seminar examines the ideas of critical theory as handed down from the Frankfurt School (which gave us Critical Theory with a capital “C” and capital “T”) in the 1930s and transformed into a more general cultural theory of the 1980s and 1990s. The Frankfurt School critical theorists – concerned with elaborating Marx’s intimations of “superstructure” and analyzing the workings of culture within capitalism – were interested in how art, as a cultural production, operates as a system that can support or thwart, depending on its deployment, the workings of capitalism. Critical theory in the 1980s and 1990s operated as a broader critique of representation – often aligned with poststructuralism – but addressed the same issue of how cultural production subsumes and deflects capitalism. This seminar examines the question of architecture through the lens of art, which itself is examined through the lens of culture. Students are asked to present examples of contemporary art or architecture that function in a “critical” context, write weekly journals, and submit a fifteen-page paper. Limited enrollment. Not offered in 2016–2017. Peggy Deamer]

3257a, **Techno-Sensations: Architecture, Technology, and the Body** 3 credits. Information technologies and new media are radically changing the way people interact with one another in public and private space. The figure of the cyborg is no longer science fiction: biotechnologies and genetic engineering are blurring the line between human and machine. How will architects harness these and other technological innovations that enhance sensory perception to craft immersive environments that allow human bodies to traffic between virtual and actual space? This seminar explores the transformative impact of the digital revolution on architecture and the human senses. After exploring these contemporary developments through the lens of history and considering how the advent of audiovisual devices – from the camera obscura to the iPhone – have altered the design of the built environment and our sensory experience of space, the course speculates about the future. Topics include the symbiotic relationship between optics and the development of the camera obscura, the panorama, and the panopticon; the impact of cinema and television on the modernist window; the impact of plumbing and climate control on domestic hygiene; the birth of modern acoustics as a response to metropolitan noise; the influence of listening devices on the modern workplace; the impact of two generations of digital devices – desktop computers and mobile handheld devices – on human interaction in public and private space; and bionics, remote sensation, and the Internet of Things. Joel Sanders

3259b, **Architecture and Contemporary Labor** 3 credits. This seminar examines both the practical and theoretical parameters that affect architectural labor today. On the theoretical side, texts are examined related to material/immaterial labor, the creative class, the performance of craft in the digital age, and the labor distinction between craft and design in architecture. On the practical side, students pull articles from journals, newspapers, Web sites, publications, and blogs that relate to creative labor and architectural remuneration to get the pulse of the contemporary dynamics of value assigned to design work and its relationship to the industries, from art and graphic design to construction and robotics. Required are short in-class presentations and a fifteen-page paper. Limited enrollment. Peggy Deamer

[3261a, **Pedagogy and Place** 3 credits. Preparatory to the spring 2016 exhibition celebrating the School’s one-hundredth anniversary, this research-based seminar examines the relationship between significant architectural pedagogies and the architectural buildings designed to accommodate them. Students are asked to document examples from the early nineteenth century to the present, combining class presentations, written texts, and graphic analyses that will form the basis of display panels to become part of the exhibit. Instructor’s lectures provide a historical overview of the topic as well as a detailed history of the Yale School of Architecture. Limited enrollment. Not offered in 2016–2017. Robert A.M. Stern]

3264b, **XS: “micro” in Japanese Architecture and Urbanism** 3 credits. This seminar focuses on recent trends in Japanese architecture and design culture over the past twenty years that developed since the bursting of the bubble economy and the architectural excess it enabled. The course looks at architectural, urban, and aesthetic concepts that embrace the diminutive. Topics include the contemporary Japanese house, micro-urbanism, return to nature movements, and concepts of both the cute and monstrous. These are explored through a series of lenses that engage tradition, pragmatism, sustainability, gender, and nationalism. The seminar requires readings and class discussion as well as an independent research project that culminates in a presentation and a paper. Limited enrollment. Sunil Bald

3265a, **Architecture and Urbanism of Modern Japan: Destruction, Continuation, and Creation** 3 credits. This course examines how design philosophies and methodologies were developed in Japanese architecture during the 130-year period from the Meiji Restoration until the postmodern era. Special attention is paid to the process of urbanization through repeated destructions and the forming of cultural identity through mutual interactions with the West, both of which worked as major forces that shaped architectural developments. Highlighted architects include Chuta Ito, Goichi Takeda, Frank Lloyd Wright, Kameki Tsuchiura, Sutemi Horiguchi, Kunio Maekawa, Kenzō Tange, Arata Isozaki, Fumihiko Maki, Kisho Kurokawa, Kazuo Shinohara, Tadao Ando, and Mirei Shigemori. Historical photos and excerpts from films are used to better understand context. Students are required to make in-class presentations and write a final paper. Limited enrollment. Yoko Kawai

[3268b, **Reinterpreting the Enlightenment: Order and Chaos in the Long Eighteenth Century** 3 credits. This seminar studies the works of architects and artists from Nicolas

Poussin and Claude Perrault to Jacques-Louis David and Claude-Nicolas Ledoux through the lenses of successive reinterpretations of the Enlightenment in the modern period. Conventional ascriptions of the “Age of Reason” (Ernst Cassirer, Emil Kaufmann) were thrown into question by post-World War II philosophers (Theodor Adorno, Max Horkheimer) and later by poststructuralist critics (Michel Foucault, Jacques Derrida); these critiques were countered by a new interest in typological form (Aldo Rossi, Bruno Fortier) that founded Neo-Rationalism on a reading of Enlightenment visions of city structure. The engaged historical interest in the reinterpretation of the French Revolution and its cultural effects (Maurice Agulhon, Mona Ozouf, Robert Darnton) together with a revived utopianism of the later 1960s opened the texts of Enlightenment architects, hitherto seen as “difficult,” to scrutiny with respect to the literary accomplishments of the late eighteenth century. More recently, the return to a study of the idea of “nature” in the work of Bruno Latour and Félix Guattari has stimulated a sense of the “modernity” of the Enlightenment’s views of the environment, for better or for worse. A fifteen-page paper that may be illustrated by graphic analyses is required. Limited enrollment. Not offered in 2016–2017. Anthony Vidler]

[3269a, **German Architecture since 1945** 3 credits. This seminar examines architecture in the Federal Republic of Germany and in the German Democratic Republic with particular attention paid to the city of Berlin and to the issue of representing a nation through buildings designed by both foreigners and its own citizens. Architects explored include Rudolf Schwarz, Egon Eiermann, Hermann Henselmann, Hans Scharoun, Ludwig Mies van der Rohe, James Stirling, O.M. Ungers, Daniel Libeskind, Zaha Hadid, and SANAA. This is a reading seminar, with oral reports and a fifteen-page paper. Limited enrollment. Not offered in 2016–2017. Kathleen James-Chakraborty]

[3270a, **New England Domestic Architecture: 1870–1910** 3 credits. Sixty years after the publication of Vincent Scully’s *The Shingle Style and the Stick Style*, this seminar revisits architect-designed suburban and resort housing in late-nineteenth- and early twentieth-century New England. The role of the emergent architectural press in disseminating new approaches to these building types and of women in commissioning, decorating, and writing them is also addressed. This is a reading seminar, with oral reports and a fifteen-page paper. Limited enrollment. Not offered in 2016–2017. Kathleen James-Chakraborty]

[3271a, **Babel** 3 credits. Few buildings can claim a longer history of interdisciplinary influence than the Tower of Babel. This seminar studies the various arenas of Babel’s appropriation—archaeological, art historical, theoretical, philosophical, theological, ideological, military, linguistic, and literary—with an eye to understanding the multivalence of architectural ideas as they circulate within culture. The course pays particular attention to Babel’s dramatic reassertion under the conditions of modernity, as a marker both of aspiration and of doubt; and it aims to speculate on the Tower’s potential future. Weekly readings and assignments provide a foundation for in-class presentations and final research papers, either on an aspect of the appropriation of Babel itself, or on the trajectory of a comparable architectural figure. Papers that engage with the construction of contemporary architectural ideas are especially welcome. Limited enrollment. Not offered in 2016–2017. Kyle Dugdale]

**3272b, Exhibitionism: Politics of Display** 3 credits. Since their inception in the eighteenth century, art museums—prestigious buildings commissioned by those who wield power and influence—have behaved like cultural barometers registering changing attitudes about the role cultural institutions play in society. Looking at museum buildings from the inside out, this seminar traces the evolution of this building type through an in-depth analysis of its key architectural elements: gallery, interstitial (circulation, assembly, retail) and infrastructure (security/climate control) spaces, and site. This seminar explores how the spatial and material development of these tectonic components both mirrors and perpetuates changing cultural attitudes about aesthetics, class, power, wealth, nature, leisure, gender, body, and the senses as seen through the eyes of artists, architects, critics, collectors, and politicians. Topics include gallery spectatorship from the Renaissance picture frame to the modernist white cube; shifting sites from palace to park to repurposed industrial structures; urban renewal, gentrification, and the postwar museum; starchitecture and the trophy museum; cruising: museums as social condensers to see and be seen; multimedia artistic practices and information technologies; and new typologies, such as biennials, art fairs, private collections, and retail hybrids. Limited enrollment. Joel Sanders

[3273b, **The Architectural Surface: Figure, Form, Ambiance** 3 credits. This seminar examines and debates the theoretical controversies surrounding the material and conceptual properties of the architectural surface. The course is conceived as a series of case studies of buildings and projects, supported by readings in philosophy, psychoanalysis, and historiography, discussing the role of the surface historically and today. Themes include smooth and rough (Alberti, Giulio Romano); solid geometries (Ledoux, Boullée); historicist tableaux (Piranesi, Soane); frames and skins (Labrouste, Paxton); smooth and rough (Le Corbusier); containers and wrappings (Koolhaas, SANAA); topologies (Lynn, Schumacher). Following the presentations, students develop and present their own case studies. Doctoral and M.E.D. students in the seminar develop a research paper in the history, theory, and criticism of the surface with special attention to historiographical context. A fifteen-page paper, with appropriate graphic analyses, is required. Limited enrollment. Not offered in 2016–2017. Anthony Vidler]

**3274a, Louis Kahn** 3 credits. Louis Kahn began and ended his career as an important architect with museums for Yale. He combined rigorous attention to structure with inquisitiveness about the nature of the educational and civic institutions for which he typically worked. This seminar focuses upon Kahn’s buildings, his unbuilt work, and his architectural theory. Paying particular attention to the years 1951 and 1974, the seminar addresses the range of geographical and cultural conditions in which he worked. It also considers his influence upon Team X, Metabolism, postmodernism, and critical regionalism. Students are required to give an in-class presentation and to write a substantial paper. Limited enrollment. Kathleen James-Chakraborty

**3275a, Expanding the Canon: Making Room for Other Voices** 3 credits. This seminar examines the participation of women as architects, designers, patrons, and critics in the development of modern architecture and design between 1900 and 1970. During these years Kate Cranston, Marion Mahony Griffin, Eileen Gray, Catherine Bauer, and Lina Bo Bardi were among those who made contributions to architectural culture and

are now attracting increasing attention and raising questions about how the goals and achievements of design reform in this period should best be characterized. Students are required to give an in-class presentation and to write a substantial paper. Limited enrollment. Kathleen James-Chakraborty

**3276b/HSAR 632b, *Life of Forms and The Shape of Time*** 3 credits. The seminar focuses on the legacy of two famed twentieth-century, Yale-based art historians, Henri Focillon and his student George Kubler, and their impact on both the practice and historiography of art and architecture. The seminar focuses on a close reading of their influential books, *Life of Forms* and *The Shape of Time*, which proposed a set of dynamic variables and indeterminacies that drive art from within, and how they helped to radicalize the way artists and architects think about works of art—no longer in isolation, but rather as pieces in longer procedural chains involving similar forms and problems mediated through space and time. Enrolled students have access to the Kubler papers at Yale Manuscripts and Archives. Limited enrollment. Eeva-Liisa Pelkonen, Nicola Suthor

**3277a, The Aesthetics of Abstraction** 3 credits. This seminar addresses different understandings over the past century associated with the concept of abstraction, specifically how it relates to aesthetics in art and architecture. While abstraction is one of the most commonly used words to describe the art and architecture of modernity, it is not always clear how this quality of abstraction operates. Through readings and discussions the course covers the development of abstract art in the early part of the twentieth century, the arguments of “medium specificity” beginning with the middle of the century, changing notions inherited from Pop art and minimalism, and the role of abstraction in contemporary work. Throughout these inquiries into art theory and practice, there is an emphasis on how abstraction as an aesthetic quality differs from abstraction as an epistemological structure or an ethical ideal. Emphasized is how architecture is influenced by, and differs from, aesthetic discourse in the other arts. Each student is required to research and write a fifteen-page paper focused on a specific aesthetic investigation in relation to the themes of the course. Limited enrollment. Michael Young

**3278b, Bibliographical Architectures** 3 credits. The histories of architecture are evidently written both in buildings and in books. This seminar takes as its point of departure a selection of items from Yale’s special collections, studying them closely, not as disembodied texts, but as material objects that share in the layered histories of the discipline. As its title suggests, the course examines architecture’s engagement with the overlapping domains of the biblical, the bibliographic, and the graphic, paying particular attention to the representation of ideas in words and images, uncovering traces of writing on architecture and of writing *on* architecture, assessing the conceit of an architecture that might itself be read as a text, and questioning the capacities of architecture as an intellectual discipline that remains stubbornly inseparable from its material embodiment. Each student identifies a subject of particular interest to be developed into a research project; topics that engage with contemporary debates are especially welcome. Limited enrollment. Kyle Dugdale

**3279b, Utopics: Utopias, Dystopias, Technotopias, and Heterotopias in Architecture and Urbanism, 1945–2001** 3 credits. This seminar investigates the rise and fall of utopian thought in architecture after the Second World War. Following an introduction

to the traditional narratives of utopia in Plato, More, Bacon, and Ledoux, the seminar addresses the emergence of utopianism as a critical practice in the 1950s. Lettrism, Situationism, Archizoom, Superstudio, Archigram, *Utopie*, Metabolism, and many other experiments were supported by political, psychoanalytical, and cybernetic theories of modern social organization. Students select one example to research through the term. An in-class presentation and a fifteen-page paper, with appropriate graphic analyses, are required. Limited enrollment. Anthony Vidler

**3299a or b, Independent Course Work** 3 or 6 credits. Program to be determined with a faculty adviser of the student’s choice and submitted, with the endorsement of the study area coordinator, to the Rules Committee for confirmation of the student’s eligibility under the rules. (See the School’s *Academic Rules and Regulations*.)

The following courses offered elsewhere in the University will fulfill the History and Theory elective requirement and may be taken with the permission of the instructor. Unless otherwise indicated, at the School of Architecture full-term courses are typically assigned 3 credits; half-term courses are assigned 1.5 credits.

**AFAM 204a, The Radical Aesthetics of Hip Hop** Engagement of the interrelated art forms that comprise hip hop, a culture conceived by African American, Afro-Caribbean, and Latino youth in the South Bronx in the 1970s. The course examines what binds and buttresses hip hop’s four disparate elements—emceeing, deejaying, b-boying/b-girling, and graffiti—with attention to their shared aesthetics of defiance, disruption, and deconstruction. Jalylah Burrell

**AFAM 215b/HSAR 373b, African American Art, 1963 to the Present** Modern African American artistic production explored in the context of American art and social history. Critical race theory and artistic discourse from the Spiral group in 1963, to the Black Arts Movement and the culture wars, to current readings in American and postblack art. The complicated relations between African American art and politics. Use of art objects from the Yale University Art Gallery. Erica James

**AFST 221b/ARCG 221b/HSAR 234b/NELC 120b, Egyptomania** Conceptual underpinnings of the use of ancient Egyptian motifs in architecture, painting, sculpture, and decorative arts throughout western Europe, the Middle East, and North America from antiquity to the present. John Darnell

**AMST 197a/HSAR 219a, American Architecture and Urbanism** Introduction to the study of buildings, architects, architectural styles, and urban landscapes, viewed in their economic, political, social, and cultural contexts, from precolonial times to the present. Topics include: public and private investment in the built environment; the history of housing in America; the organization of architectural practice; race, gender, ethnicity, and the right to the city; the social and political nature of city building; and the transnational nature of American architecture. Elihu Rubin

**AMST 217b/HSAR 216b, Craft, Design, and Art: American Domestic Architecture and Decorative Arts since 1900** A survey of American architecture and decorative arts in the twentieth century. Examination of architecture, furniture, metals, ceramics, and glass. Topics include responses to the reforms of the Arts and Crafts movement, the

introduction of modernism, the survival and revival of traditional and vernacular expressions, the rise of industrial designers, the development of studio crafts, and the varieties of postmodern expression. Edward Cooke

**AMST 457a/HIST 113Ja, Cultural Capital: New York in the Twentieth Century** An interdisciplinary study of New York City as a global cultural capital in the twentieth century. Social, political, and economic forces shaping the principal institutions of the city's patrician, popular, and mass cultures. The formation of identifiably "New York" styles in the arts, architecture, photography, literature, and film. The changing geography of cultural creation, reproduction, and distribution in the city. Jean-Christophe Agnew

**AMST 810a/WGSS 815a, American Public Sculpture: History, Context, and Continuing Significance** Building on a new partnership between the Smithsonian Institution and Yale University, this course offers a broad-based and multidisciplinary exploration of public sculpture in the United States. Course work includes field trips and digital projects as well as readings in the scholarship of public memory, cultural heritage, conservation, and aesthetics. Laura Wexler

**ARCG 161b/CLCV 161b/HSAR 247b, Art and Myth in Greek Antiquity** Visual exploration of Greek mythology through the study of ancient Greek art and architecture. Greek gods, heroes, and mythological scenes foundational to Western culture; the complex nature of Greek mythology; how art and architecture rendered myths ever present in ancient Greek daily experience; ways in which visual representations can articulate stories. Use of collections in the Yale University Art Gallery. Milette Gaifman

**ARCG 170a/CLCV 170a/HSAR 250a, Roman Art: Empire, Identity, and Society** Masterpieces of Roman art from the Republic to Constantine studied in their historical and social contexts. The great Romans and the monuments they commissioned—portraits, triumphal arches, columns, and historical reliefs. The concept of empire and imperial identity, politics and portraiture, the making and unmaking of history through art, and the art of women, children, freedmen, and slaves. Diana Kleiner

**ARCG 252b/CLCV 175b/HSAR 252b, Roman Architecture** The great buildings and engineering marvels of Rome and its empire. Study of city planning and individual monuments and their decoration, including mural painting. Emphasis on developments in Rome, Pompeii, and central Italy; survey of architecture in the provinces. Diana Kleiner

**F&ES 746b, Archetypes and the Environment** This course explores the mythology, literatures, arts, and folklore of a variety of cultures in search of archetypal characters whose role is to mediate between nature and society. Beginning with sources as early as *The Epic of Gilgamesh* and ending with contemporary film and media, the course seeks to examine and understand the ways in which diverse peoples integrate an awareness of their nature in their beliefs, values, and arts. The course examines texts from a variety of languages, including Akkadian, Latin, Tibetan, Sanskrit, Mongolian, German, French, and Italian, but all student readings are available in English; students with reading abilities in foreign languages will be encouraged to examine primary sources wherever possible. The course includes visits to the Beinecke Rare Book and Manuscript Library, the Yale Center for British Art, the Yale Art Gallery, the Sterling Library Babylonian Collection, and the Yale

Peabody Museum. The 1-credit option is available for students who do not choose to complete a final project, but wish to participate in all classes and museum/library visits. Three hours lecture/discussion. Paul A. Draghi

**HIST 255Jb, London and Modernity, 1880 to the Present** Aspects of modernity and the changing character of London as a metropolitan center from the late nineteenth century to the present. Social and economic development of the city, urban cultures, historical geography, sexuality, and the imperial and postimperial metropolis. Keith Wrightson

**HIST 919b/HSHM 746b, History and Material Culture** Approaches to studying material culture historically. What—and how—can historians learn from objects? How can objects be used to do history? This seminar explores methods and literary genres for doing and writing material history from across a range of disciplines: history of science, history of art, anthropology, archaeology, conservation science, and museum studies. Paola Bertucci, Chitra Ramalingam

**HSAR 118a/MMES 128a/SAST 268a, Introduction to the History of Art: The Arts of Islam** Survey of Islamic art and architecture in the Middle East, North Africa, and South Asia from the seventh century to the present. Individual monuments, artworks, and historical cities examined within their artistic and historical contexts. Architecture and urbanism, manuscript painting and portraiture, and the arts of calligraphy and ceramics. Includes visits to the Yale University Art Gallery. Kishwar Rizvi

**HSAR 293a, Baroque Rome: Painting, Sculpture, Architecture** Analyses of masterpieces by prominent artists in baroque Rome. Caravaggio's "baroque" differentiated from the path of the classicist artists. Works by Gian Lorenzo Bernini, who dominated the art scene in Rome as sculptor and architect half a century after Caravaggio's death. Nicola Suthor

**HSAR 312b, Modern Architecture, 1890–1980** Architects, movements, and buildings central to the development of modern architecture from the late nineteenth century through the 1970s. Common threads and differing conceptions of modern architecture. The relationship of architecture to urban transformation; the formulation of new typologies; architects' responses to new technologies and materials; changes in regimes of representation and media. Architects include Adolf Loos, Frank Lloyd Wright, Le Corbusier, Ludwig Mies van der Rohe, and Louis Kahn. Craig Buckley

**HSAR 456b/MMES 456b, Art and Politics in the Modern Middle East** Political ideologies have either unified the modern Middle East, such as Pan-Arabism of the 1960s and Islamism of the 1980s, or caused deep ruptures, such as Zionism and sectarianism. Examination of the art and architectural productions that have gone hand-in-hand with these political developments from the nineteenth century until present day. Poetic, visual, and urban interventions document the profound changes that have defined the countries of this region, while connecting them to political movements throughout the world. Kishwar Rizvi

**HSAR 500a, Methods in Art History** This seminar is designed to introduce students to a range of art historical methods past and present: a variety of formalisms, connoisseurship, different kinds of iconography, the social history of art, psychoanalysis, and

a number of other approaches that are sometimes referred to as visual culture. Readings include classic texts by Riegl, Wölfflin, Panofsky, and Warburg, and more recent approaches by Alpers, Clark, and Crary, among others. Kishwar Rizvi

**HSAR 563b/CLSS 864b, Art and Ritual in Greek Antiquity** The relationship between art and ritual has received much scholarly attention in various fields, particularly classics, history of art, religious studies, and anthropology. Greek antiquity offers an ideal context for considering the intricate ties between visual culture and religious practices, for much of what is known today as ancient Greek art and architecture was originally related to rituals; artifacts and architectural monuments such as painted pottery, sculptural reliefs, and temples served as settings for worship and ceremonial events and featured representations of activities such as libations and sacrifices. The seminar explores how works of art and architecture shaped ancient practices and theologies. While examining closely ancient artifacts and monuments, students consider the most recent theoretical frames related to the subject from various schools of thought such as the Paris school, British anthropology, and *Bildwissenschaft*. Milette Gaifman

**HSAR 570a/ARCG 749a/CLSS 846a, Becoming Hadrian: Autobiography and Art in the Second-Century A.D.** Marguerite Yourcenar's famed fictional *Memoirs of Hadrian* serves as the starting point for an exploration of Hadrian and the art he commissioned in Rome and abroad. Hadrian's passion for life, quest after peace, romantic wanderlust, veneration of Greek culture, and craving for love, along with his acceptance of death's inexorableness, led him to commission some of Rome's greatest monuments. The emperor's flair for leadership and talent as an amateur architect inform student projects on the sculpture, mosaics, and buildings of the age, among them the portraiture of Hadrian's lover Antinous, the Pantheon, and Hadrian's Wall in Britain. Qualified undergraduates who have taken HSAR 250a and/or HSAR 252a may be admitted with permission of the instructor. Diana Kleiner

**HSAR 672a, Landscape, Mobility, and Dislocation** During the long nineteenth century, in a period characterized by industrialization, imperial expansion, and global migration, landscape became an increasingly powerful and contested artistic medium, one that could express the ideologies of empire, philosophies of nature, relationship between geography and vision, and constructions of nationhood and alterity. This course considers such issues by looking at American landscape painting in both a transatlantic and transhemispheric context. We read a range of texts, including those by artists, critics, philosophers, and scientists from the period, in order to examine the cultural, historical, and aesthetic construction of landscape in the nineteenth century, paying particular attention to questions of artistic mobility and dislocation. The course includes a trip to the Hudson River Valley, the favored subject of so many American landscape painters, as well as to New York to view a special installation of works by artists who traveled to Latin America. Tim Barringer, Jennifer Raab

**HSAR 739b, Histories and Theories of Modern Architecture: Theorizing Space** That space is a fundamental category for thinking about architecture may appear self-evident. Yet concepts of space emerge quite late in the historiography of modern architecture. This seminar retraces concepts of space as they emerge and shift from the second half of the nineteenth century to the late twentieth century. In the writings of historians,

architects, artists, and critics, space marks an unstable epistemological filter through which to interpret and analyze buildings, works of art, ruins, and public squares. If philosophical aesthetics since Kant had maintained that theorizations of space were an *a priori* feature of the human mind, the nineteenth century witnessed the rise of a more intensive psychological and formal interest in describing and theorizing spatial *experience*, one that both troubled and reoriented the Kantian tradition. Nineteenth-century readings include Gottfried Semper's theorization of architecture as an art of enclosing space; theories of spatial empathy from German psychological aesthetics; and Alois Riegl's conception of history as the unfolding of space conceptions. In the twentieth century we examine the emergence of space-time theories, vitalist conceptions of living space, geographical conceptions of social space, notions of acoustic and electronic space developed within media theory, and the geographically informed critique of space developed by Henri Lefebvre. Craig Buckley

**HSAR 753b, Theories of Imagination and Visual Perception** This seminar traces the role of imagination and visual perception as conceived by philosophers, phenomenologists, perceptual psychologists, and other theorists in mainly Western thought since the seventeenth century. The ways in which perception and imagination are conceived together are informed by changing conceptions of each term. "Imagination" can be seen as a mental power of internal image making that must be considered separately from perception, or it may be considered as an indispensable component of perception, which itself can be conceived as a more or less faithful representation or a creative process. Readings are chosen from among the works of John Locke, Immanuel Kant, Hippolyte Taine, Hermann von Helmholtz, Henri Bergson, Jean Piaget, Maurice Merleau-Ponty, and others. The significance of the discourse for art and literature is stressed. Students make presentations and submit papers on topics of their choosing in consultation with the instructor. Qualified undergraduates are welcome. Margaret Olin

**HUMS 163b, The House and the Writer's Life** The study of seven American writers' houses from the mid-nineteenth century to today. Authors include Stowe, Twain, James, Wharton, Stein, Merrill, and Ashbery. Focus is on the creation of the house, including issues of location, architecture, and design, and on the literary works that emerged during each writer's process of setting up the house. Trips to local houses and museums. Karin Roffman

**HUMS 444b, The City of Rome** An interdisciplinary study of Rome from its legendary origins through its evolving presence at the crossroads of Europe and the world. Exploration of the city's rich interweaving of history, theology, literature, philosophy, and the arts in significant moments of Roman and world history. Virginia Jewiss

**PHIL 320a, Philosophy of Architecture** Perspectives on the questions of architectural aesthetics, language, space, and ethics from the position of contemporary phenomenology. Karsten Harries

**PHIL 475b, The Bavarian Rococo Church** A case study, exploring the relationship of architecture, reason, and the sacred. Focus is on the epochal threshold that both separates and joins the theatrical culture of the Baroque from our modern world-picture. Karsten Harries

**SOCY 169b, Visual Sociology** Introduction to themes and methods in visual sociology. The role and use of visual information in social life, including images, objects, settings, and human interactions. Ethnographic photography, the study of media images, maps and diagrams, observation and coding of public settings, unobtrusive measures, and the use of Internet resources. Philip Smith

**SOCY 313a, Sociology of the Arts and Popular Culture** An advanced introduction to sociological perspectives on the arts and popular culture. Emphasis on the conceptualization of culture within social theory, with the aim of interpreting cultural expressions and artifacts—artworks, music, television, film, and literature. Ron Eyerman

**SOCY 620a<sup>U</sup>, Material Culture and the Iconic Consciousness** How and why do contemporary societies continue to symbolize sacred and profane meanings, investing these meanings with materiality and shaping them aesthetically? Initially exploring such “iconic consciousness” in theoretical terms (philosophy, sociology, semiotics), the course then takes up a series of compelling empirical studies about food and bodies, nature, fashion, celebrities, popular culture, art, architecture, branding, and politics. Jeffrey Alexander

## URBANISM AND LANDSCAPE

Andrei Harwell and Elihu Rubin [F], Alan Plattus [Sp], Study Area Coordinators

In this study area, a broad range of courses explore the aesthetic, economic, social, and political influences on the spatial form of urban places and the urban, suburban, and rural landscapes that form our design ecology.

For the M.Arch. I program, required courses in this study area include an introduction to urban design (4011b), an introduction to planning and development (4021a), and the satisfactory completion of one of the elective seminar courses from this study area. Note that the elective course 3237b will fulfill the Urbanism and Landscape elective requirement, although it cannot fulfill both the History and Theory and the Urbanism and Landscape elective requirements. Courses offered outside the School not listed below may fulfill this elective requirement provided permission from the study area coordinators has been granted.

### *Required Courses*

**4011b, Introduction to Urban Design** 3 credits. (Required of first-year M.Arch. I students.) This course is an introduction to the history, analysis, and design of the urban landscape presented with weekly lectures and discussion sections. Emphasis is placed on understanding the principles, processes, and contemporary theories of urban design, and the relations between individual buildings, groups of buildings, and the larger physical and cultural contexts in which they are created and with which they interact. Case studies are drawn from cities around the world and throughout history and focus on the role of public space and public art in shaping the form, use, and identity of cities and regions. Alan Plattus

**4021a, Introduction to Planning and Development** 3 credits. (Required of second-year M.Arch. I students.) This course demonstrates the ways in which financial and political feasibility determine the design of buildings and the character of the built environment.

Students propose projects and then adjust them to the conflicting interests of financial institutions, real estate developers, civic organizations, community groups, public officials, and the widest variety of participants in the planning process. Subjects covered include housing, commercial development, zoning, historic preservation, parks and public open space, suburban subdivisions, and comprehensive plans. Alexander Garvin

### *Elective Courses*

**[4211b, Intermediate Planning and Development]** 3 credits. This seminar examines the interaction of property development and planning with local market conditions, financing alternatives, government policy, and the political context at the community level. During the first part of the term, students learn how to analyze a specific neighborhood (in New York City) by using fundamental planning techniques and examining national trends within that neighborhood. Topics include housing, retail, and office development; zoning; historic preservation; transportation; business improvement districts; and building reuse and rehabilitation. In the second part of the term students prepare recommendations for the neighborhood that will meet the conflicting interests of financial institutions, real estate developers, civic organizations, community groups, public officials, and a wide variety of participants in the planning and development process. The end product is a printed book presenting the results of their work. Prerequisite: 4021a, STCY 176b, or equivalent course work. Limited enrollment. Not offered in 2016–2017. Alexander Garvin]

**4216a, Globalization Space: International Infrastructure and Extrastatecraft** 3 credits. This lecture course researches global infrastructures as a medium of transnational polity. Lectures visit the networks of trade, communication, tourism, labor, air, rail, highway, oil, hydrology, finance, and activism. Case studies travel around the world to, for instance, free trade zones in Dubai, IT campuses in South Asia, high-speed rail in Saudi Arabia, cable/satellite networks in Africa, highways in India, a resort in the DPRK, golf courses in China, oil-financed development in Sudan, and automated ports. These investigations begin in transnational territory where new infrastructure consortia operate in parallel to or in partnership with nations. Not only an atlas or survey of physical networks and shared protocols, the course also considers their pervasive and long-term effects on polity and culture. Infrastructures may constitute a de facto parliament of global decision making or an intensely spatial extra statecraft. Each week, readings, with both evidence and discursive commentary, accompany two lectures and a discussion section. A short midterm paper establishes each student’s research question for the term. A longer final paper completes the requirements of the course. Limited enrollment. Keller Easterling

**4219a, Urban Research and Representation** 3 credits. Every day, architects and urban designers make proposals that shape the public and private realms of the city. This seminar sets out to contextualize the social and political ramifications of these interventions; to intensify the designer’s tool kit of deep, sociohistorical research of site and place; and to cultivate a reflexive practice that considers seriously the social responsibilities of both the architect and the urban researcher. In the classroom, and in the field, this seminar introduces a diverse set of methods for studying the urban environment, from the archival and visual to the observational and ethnographic. Limited enrollment. Elihu Rubin

**4221b, Introduction to Commercial Real Estate** 3 credits. This seminar introduces commercial real estate. It does not require any prior knowledge of finance, accounting, or taxation policies. Commercial real estate is income-producing property that is built, financed, and sold for investment. This course examines five basic types of commercial real estate (office, industrial, retail, multifamily, and hotel) from the standpoints of the developer, lender, and investor. Principles of location, financing, timing of market cycles, leasing, ownership structure, and external factors are explored. Students are expected to evaluate assets, partnership interests, and other positions such as debtor interests through valuation measurement, which requires the use of some simple mathematics. An HP-12C calculator or laptop computer with Excel for use in class is required. Students also examine commercial deeds, leases, partnership agreements, and other legal documents. Each student selects a building or development site within New Haven County for a due diligence analysis of zoning, real estate taxes, deeds, liens, market supply and demand, projected income and expenses, and availability of debt. In addition to out-of-class assignments, a brief exercise is included during each class. Limited enrollment. Kevin D. Gray

**4222a, History of Landscape Architecture: Antiquity to 1700 in Western Europe** 3 credits. This course presents an introductory survey of the history of gardens and the interrelationship of architecture and landscape architecture in Western Europe from antiquity to 1700, focusing primarily on Italy. The course examines chronologically the evolution of several key elements in landscape design: architectural and garden typologies; the boundaries between inside and outside; issues of topography and geography; various uses of water; organization of plant materials; and matters of garden decoration, including sculptural tropes. Specific gardens or representations of landscape in each of the four periods under discussion—Ancient Roman, medieval, early and late Renaissance, and Baroque—are examined and situated within their own cultural context. Throughout the seminar, comparisons of historical material with contemporary landscape design are emphasized. Limited enrollment. Bryan Fuermann

**4223b, History of British Landscape Architecture: 1600 to 1900** 3 credits. This seminar examines chronologically the history of landscape architecture and country-house architecture in Britain from 1600 to 1900. Topics of discussion include Italian and French influences on the seventeenth-century British garden; military landscaping; the Palladian country house and British agricultural landscape; Capability Brown's landscape parks; theories of the picturesque and of the landscape sublime; Romanticism and the psychology of nature; the creation of the public park system; arts and crafts landscape design; and the beginnings of landscape modernism. Comparisons of historical material with contemporary landscape design, where appropriate, are made throughout the term. The collection of the Yale Center for British Art is used for primary visual material, and a trip to England over spring break, partially funded by the School, allows students to visit firsthand the landscape parks studied in this seminar. Limited enrollment. Bryan Fuermann

**4226b/F&ES 888b, Ecological Urban Design and Landscape Architecture** 3 credits. This seminar course, open to students in the School of Architecture and the School of Forestry & Environmental Studies, investigates the ecological, social, and cultural factors

that inform urban design. Teams, comprised of students from both schools, explore these factors through lectures, workshops, and field trips. Students measure, record, and map out biological processes to see how these factors inform the built environment. By exploring ecological and social drivers that impact hydrology, microclimates, corridors, connectivity, and biodiversity, students discover how these drivers interface with urbanized areas including public spaces, neighborhoods, and green infrastructure strategies. Using the model of designed experiments, teams craft effective and adaptable experiments to test, monitor, and adapt urban design approaches for people and cities. Using current land-planning projects to connect with stakeholders and establish real-world strategies, students learn how to connect ecological science with site analysis and land use planning and propose innovative strategies—from landscape architecture and urban ecology—for shaping and managing urban ecosystems. Limited enrollment. Alexander Felson

**4231b, City-Making on the Arabian Peninsula** 3 credits. From eighth-century Baghdad to twenty-first-century Masdar, the Middle East has been approached, from within and without, as a susceptible terrain for creating cities. This seminar considers the histories and mythologies of city-making on the Arabian Peninsula, focusing on urban planning since the early twentieth century. Modern city-making is discussed as a globally induced building boom, delivered by figures like American oil men in Saudi Arabia and Sir Norman Foster in Abu Dhabi. A regional survey includes an inspection of Gulf cities (Abu Dhabi, Aramco company towns, Doha, Dubai, Jubail, Kuwait, and Riyadh) and their earliest attempts at modern urbanization. Arising themes and particularities are discussed. Historical context, mostly in the first half of the term, provides students the means to analyze forces and ideologies shaping the newest cities and mega-projects in the region and beyond. The course is not so much a geographical study as an investigation of the pervasive contemporary forces in urbanism and globalization. Whenever possible, the week's discussions focus on a particular Gulf city as the exemplification of chosen themes. Beyond just sociology and urbanism, reading and discussion materials include primary historical documents and historical and contemporary journalism. Limited enrollment. Todd Reisz

**[4233b, Ghost Towns** 3 credits. This is an advanced, interdisciplinary seminar in architectural history, urban planning, vernacular building, the politics of preservation, collective memory, tourism, and, ultimately, urban sustainability. Looking at a broad spectrum of failed or almost-failed cities in the United States and across the globe, this seminar uses the ghost town and its rhythms of development and disinvestment to establish a conceptual framework for contemporary urban patterns and processes. Students develop skills in urban and architectural research methods, visual and formal analysis, effective writing, and critical reasoning. Limited enrollment. Not offered in 2016–2017. Elihu Rubin]

**[4234b, Residential Design, Development, and Management** 3 credits. This seminar examines the creation and evolution of residential housing in the United States over the past century. Individual sessions are devoted to a critical and in-depth review of housing types and their development in both urban and suburban environments and to the exploration of the architectural, financial, legal, marketing, and social issues involved in the creation, management, and maintenance of housing. The seminar includes scheduled visits to specific examples of for-profit, nonprofit, and government-developed residential

properties where students meet and speak with the designers and developers responsible for the building's construction and management. Prerequisite: 4021a, STCY 176b, or the equivalent. Limited enrollment. Not offered in 2016–2017. Alexander Garvin, Ryan Salvatore]

**4235b, Credentials: The Professions of Urbanizing** 3 credits. As the close of the 1960s found cities in Europe and North America designed into obsolescence, urbanization unfurled with conviction in other parts of the world. The following decade could have been an era of true global expansion for the architectural and planning professions; however, there are many examples of where they were dismissed in favor of other enterprises, namely large-scale engineering companies and so-called technical and management service providers. The products of these urbanizing professions set in motion the global rules for and expectations of modern notions of the city. This seminar identifies and pursues case studies of expansive infrastructural projects in such places as Turkey, Pakistan, Iran, Iraq, Saudi Arabia, and the United Arab Emirates. Through these case studies, students seek out the credentials and historical tracks of performers who have delivered urbanization. The early part of the term focuses on a core set of readings that help shape the seminar's themes; thereafter, weekly research assignments develop toward a final collaborative production to be defined through the course of the term. Limited enrollment. Todd Reisz

**4299a or b, Independent Course Work** 3 or 6 credits. Program to be determined with a faculty adviser of the student's choice and submitted, with the endorsement of the study area coordinator, to the Rules Committee for confirmation of the student's eligibility under the rules. (See the School's *Academic Rules and Regulations*. Available for credit to fulfill the M.Arch. I Urbanism and Landscape elective requirement with the approval of the study area coordinators.)

The following courses offered elsewhere in the University will fulfill the Urbanism and Landscape elective requirement and may be taken for credit with the permission of the instructor. Unless otherwise indicated, at the School of Architecture full-term courses are typically assigned 3 credits; half-term courses are assigned 1.5 credits.

**AFAM 196a/AMST 196a/ER&M 226a/EVST 196a, Race, Class, and Gender in American Cities** Examination of how racial, gender, and class inequalities have been built, sustained, and challenged in American cities. Focus on the twentieth and twenty-first centuries. Topics include industrialization and deindustrialization, segregation, gendered public/private split, gentrification, transit equity, environmental justice, food access, and the relationships between public space, democracy, and community well-being. Includes field projects in New Haven. Laura Barraclough

**AFAM 268a/PLSC 245a, Urban Politics and Policy** Analysis of competing approaches to urban politics and political economy with a focus on how scholars debate the study of power, race, and space. Application of theories to contemporary policy issues such as policing, metropolitan disparities, and inner-city revitalization. Cynthia Horan

**AFAM 270b/PLSC 280b, Poverty, Politics, and Policy in the American City** Examination of how politics informs the formulation and implementation of policies to address

urban poverty. Consideration of alternative explanations for poverty and alternative government strategies. Focus on efforts by local organizations and communities to improve their situations within the context of government actions. Cynthia Horan

**AFAM 584a/SOCY 584a, Inequality, Race, and the City** Urban inequality in America. The racial iconography of the city is explored and represented, and the dominant cultural narrative of civic pluralism is considered. Topics of concern include urban poverty, race relations, ethnicity, class, privilege, education, social networks, social deviance, and crime. Elijah Anderson

**AFST 830b/HIST 830b, Cities, Media, and Culture in Twentieth-Century Africa** This seminar considers the scholarship on African urban life during the twentieth century. We read recent works about intellectual and cultural history, infrastructure and technology, political economy, urban planning, and media. In consultation with the instructor, students spend the last weeks of the course developing a study of a specific African city based on a mix of secondary literature and a dedicated primary source. Daniel Magaziner

**AMST 311b/ER&M 311b, Latina/o New Haven** Introduction to the field of Latina/o studies, with a focus on community-based research in New Haven. Training in interdisciplinary methods of social research, including oral history, interviews, archival research, cultural analysis, and social documentation. Students design collaborative research projects. Alicia Schmidt Camacho

**AMST 348b, Space, Place, and Landscape** Survey of core concepts in cultural geography and spatial theory. Ways in which the organization, use, and representation of physical spaces produce power dynamics related to colonialism, race, gender, class, and migrant status. Multiple meanings of home; the politics of place names; effects of tourism; the aesthetics and politics of map making; spatial strategies of conquest. Includes field projects in New Haven. Laura Barraclough

**AMST 457a/HIST 113Ja, Cultural Capital: New York in the Twentieth Century** An interdisciplinary study of New York City as a global cultural capital in the twentieth century. Social, political, and economic forces shaping the principal institutions of the city's patrician, popular, and mass cultures. The formation of identifiably "New York" styles in the arts, architecture, photography, literature, and film. The changing geography of cultural creation, reproduction, and distribution in the city. Jean-Christophe Agnew

**AMST 789a, Social Theory of the City** This reading-intensive course considers how scholars from a variety of disciplines have constructed and conceptualized the city, with particular attention to the role of the urban setting as both product and producer of social relations of power. Students examine the historiography of urban theory, including both classical and contemporary approaches. Readings draw from a variety of theoretical formations including but not limited to urban ecology, political economy, neoliberal urbanism, critical race theory, feminism, queer theory, and more. A primary aim of the course is to trouble the spatial, temporal, and conceptual bounds of what qualifies as urban, and to consider how alternative ways of imagining the city can and do support a range of political agendas and social movements. Laura Barraclough

**AMST 848b/ENGL 853b, Inventing the Environment in the Anthropocene** Although the concept of the Anthropocene can be dated in various ways, two of the most important benchmarks seem to be the beginning of industrial production in the late eighteenth century and the uptick in carbon dioxide emissions from the mid-nineteenth century (petroleum came into use during the Civil War). The period between these two moments is also that in which the modern language of the environment took shape, from Cuvier's discovery of extinction and Humboldt's holistic earth science to the transformative work of Thoreau and George P. Marsh. This course shuttles between the contemporary debate about the significance and consequences of the Anthropocene and a reexamination of that environmental legacy. We look at the complexity of "nature," beginning with the Bartrams, Jefferson, Cuvier, and the transatlantic literatures of natural history; georgics and other genres of nature writing; natural theology; ambiguities of pastoral in American romantic writing (Bryant, mainly); the impact of Humboldt (Emerson, Thoreau, Whitman); westward expansion and Native American writing about land; Hudson School painting and landscape architecture. We also think about the country/city polarity and the development of "grid" consciousness in places like New York City. One aim is to assess the formation and legacy of key ideas in environmentalism, some of which may now be a hindrance as much as a foundation. Secondary readings from Leo Marx, Henry Nash Smith, and William Cronon, as well as more recent attempts to reconceive environmental history (Joachim Radkau), ecocriticism (Lawrence Buell), and related fields, as well as science journalism (Elizabeth Kolbert). We attend and discuss Dipesh Chakrabarty's Tanner lectures in February. Students are invited to explore a wide range of research projects; and one assignment is to devise a teaching unit for an undergraduate class on the same topic. Michael Warner

**ANTH 339b, Urban Ethnography of Asia** Introduction to the anthropological study of contemporary Asian cities. Focus on new ethnographies about cities in East, Southeast, and South Asia. Topics include rural-urban migration, redevelopment, evictions, social movements, land grabbing, master-planned developments, heritage preservation, utopian aspirations, social housing, slums and precariousness, and spatial cleansing. Erik Harms

**ANTH 406a/EVST 424a/PLSC 420a, Rivers: Nature and Politics** The natural history of rivers and river systems and the politics surrounding the efforts of states to manage and engineer them. James Scott

**ANTH 575a<sup>u</sup>, Hubs, Mobilities, and Global Cities** Analysis of urban life in historical and contemporary societies. Topics include capitalist and postmodern transformations, class, gender, ethnicity, migration, and global landscapes of power and citizenship. Helen Siu

**ANTH 710b/ARCG 710b, Settlement Patterns and Landscape Archaeology** An introduction to the archaeological study of ancient settlements and landscapes. Topics include an overview of method and theory in settlement and landscape archaeology; field methods of reconnaissance, survey, and remote sensing; studies of households and communities; studies of ancient agricultural landscapes; regional patterns; roads and networks of communication; urbanism and ancient cities; and symbolic interpretations of ancient landscapes. Oswaldo Chinchilla

**ANTH 772a<sup>u</sup>/ARCG 772a<sup>u</sup>, Cities in Antiquity: The Archaeology of Urbanism** Archaeological studies of ancient cities and urbanism. Topics include the origin and growth of cities; the economic, social, and political implications of urban life; and archaeological methods and theories for the study of ancient urbanism. Case studies include ancient cities around the world. Anne Underhill, Oswaldo Chinchilla

**ENGL 212b, Poetry of London** A study of London in poetry from the Middle Ages to the present, with attention to the interplay of form, genre, and tradition with the changing life of the metropolis. Prerequisite: ENGL 125–126 or equivalent. Lawrence Manley

**EVST 292a/GLBL 217a, Sustainability in the Twenty-First Century** Sustainability as an overarching framework for life in the twenty-first century. Ways in which this integrated policy concept diverges from the approaches to environmental protection and economic development that were pursued in the twentieth century. The interlocking challenges that stem from society's simultaneous desires for economic, environmental, and social progress despite the tensions across these realms. Daniel Esty

**F&ES 746b, Archetypes and the Environment** This course explores the mythology, literatures, arts, and folklore of a variety of cultures in search of archetypal characters whose role is to mediate between nature and society. Beginning with sources as early as *The Epic of Gilgamesh* and ending with contemporary film and media, the course seeks to examine and understand the ways in which diverse peoples integrate an awareness of their nature in their beliefs, values, and arts. The course examines texts from a variety of languages, including Akkadian, Latin, Tibetan, Sanskrit, Mongolian, German, French, and Italian, but all student readings are available in English; students with reading abilities in foreign languages will be encouraged to examine primary sources wherever possible. The course includes visits to the Beinecke Rare Book and Manuscript Library, the Yale Center for British Art, the Yale Art Gallery, the Sterling Library Babylonian Collection, and the Yale Peabody Museum. The 1-credit option is available for students who do not choose to complete a final project, but wish to participate in all classes and museum/library visits. Three hours lecture/discussion. Paul A. Draghi

**F&ES 788b, Applied Urban Ecology** Ecology is being transformed from a field historically disengaged from the human built environment to one that can provide insight into the understanding, design, and management of the constructed world. Urban ecology is central in this transformation. Urban ecologists are expanding their focus from "ecology in cities," where they studied urban flora and fauna, to the "ecology of cities," where they study human-biological interactions while also increasing their attention to the complex interplay among people, society, and environment. This reorientation has also catalyzed action-oriented initiatives. This course examines the current developments in urban ecology and looks at the transformative role it can play in shaping and managing urban environments. To this end, we examine fundamental issues in theory and practice that challenge the current understanding of urban ecosystems and that question the relationship between science and action in urban ecology. We also look at limitations and opportunities for conducting urban ecological research as well as methods specific to urban sites. The course includes fieldwork augmented with an overview of current literature in urban ecology, focusing on issues relating to science, application, advocacy,

and contemporary concepts of stewardship. The final project includes an urban ecological design proposal and supporting research paper. Alexander J. Felson

**F&ES 799a, Sustainable Development Goals and Implementation** This course has students (working alone or in a small group) design a specific implementation plan for a specific country for a specific item that is part of the Sustainable Development Goals to be adopted by the U.N. in September 2015. Students study the new post-2015 sustainable development goals and their implementation in the real world. The course focuses primarily on understanding and developing the ability to effectively apply a variety of tools and means of implementation, relying primarily on guest lecturers. The aim is for each student or group of students to combine a geographic area/region (for example, a country of key interest), a sustainable development goal, and a tool for implementation to design an effective implementation strategy to present to those at the ministerial and decision-making level. Gordon T. Geballe

**F&ES 817a, Urban, Suburban, and Regional Planning Practice** This course explores the challenges and opportunities faced by America's suburban communities and urban centers as they work to become more sustainable and livable. Land use plans, private development, and public infrastructure shape our communities and determine where and how development occurs. The form of our cities and towns dictates our ability to meet the nation's housing demand and grow our employment while reducing greenhouse gas emissions, improving the environment, and enhancing quality of life. Planners play a key role in understanding trends, crafting policy solutions, and generating support for action through stakeholder engagement. While most land use decision making is local, the majority of the challenges and opportunities we face cross political boundaries. New regional policies and partnerships, coupled with consensus-building across diverse constituencies, will be necessary to realize a new way to build our communities for the twenty-first century. This course delves into the planning techniques, zoning tools, and other land use regulations that are the principal mechanisms employed to achieve safe, livable, and sustainable communities. This course is part of the concentration in land use and planning, a subset of classes under the specialization in sustainable land management. This subset is for students interested in the interface of environmental issues with land use, planning, and development. The other courses in the subset are F&ES 820b and 835a. Enrollment limited to twenty-five. David Kooris

**F&ES 820b, Land Use Law and Environmental Planning** This course explores the regulation by local governments of land uses in urban, rural, and suburban areas and the effect of development on the natural environment. The course helps students understand, in a practical way, how the environment can be protected through effective regulation at the local level. It introduces students to federal, state, and regional laws and programs that affect watershed protection and to the laws that delegate to local governments primary responsibility for decision making in the land use field. Theories of federalism, regionalism, states' rights, and localism are studied. The history of the delegation of planning and land use authority to local governments is traced, leading to an examination of local land use practices particularly as they relate to controlling development in and around watershed areas as well as regulatory response to sea-level rise and climate change. Course

participants engage in empirical research working to identify, catalogue, and evaluate innovative local laws that successfully protect environmental functions and natural resources, and the manner in which towns, particularly on the coast, incorporate climate change into their planning and regulations. Nearby watersheds are used as a context for the students' understanding of the strengths and weaknesses of local planning and regulation. Attention is paid, in detail, to how the development of the land adversely affects natural resources and how these impacts can be mitigated through local planning and subsequent adoption of environmental regulations and regulations designed to promote sustainable development in a climate-changing world. The course includes examination of the state and local response to climate change, sea-level rise, growth management, alternatives to Euclidean zoning, low-impact development, brownfields redevelopment, energy conservation, and innovative land use strategies. Marjorie Shansky

**F&ES 835a, Seminar on Land Use Planning** Land use control exercised by state and local governments determines where development occurs on the American landscape, the preservation of natural resources, the emission of greenhouse gases, the conservation of energy, and the shape and livability of cities and towns. The exercise of legal authority to plan and regulate the development and conservation of privately owned land plays a key role in meeting the needs of the nation's growing population for housing and nonresidential development and in ensuring that critical environmental functions are protected from the adverse impacts of land development. This course explores the multifaceted discipline of land use planning and its associated ecological implications. Numerous land use strategies are discussed that provide practical tools for professionals to use to create sustainable buildings, neighborhoods, and communities. The focus of this seminar is to expose students to the basics of land use planning in the United States and to serve as an introduction for the F&ES curricular concentration in land use. Guest speakers are professionals involved in sustainable development, land conservation, smart growth, and climate-change management. Classes include discussions on the trajectory for professional careers. Jessica Bacher

**F&ES 971b, Land Use Clinic** This clinic explores a variety of specific community land use topics of current concern and relevance to the field, to the curriculum, and to society. Potential project topics include renewable energy, natural resources, rural-based land uses, agriculture, and sustainable urban planning. Students work with the instructor to develop papers, research memorandums, and publications on a selected topic. The instructor or guest speakers lecture on specific topics related to student projects. Additionally, students attend field trips relevant to the curriculum and may participate in project meetings with clients. Students select from a project list or meet with the instructor to design a relevant project. Jessica Bacher

**HIST 120a/AMST 163a/EVST 120a/HSBM 204a, American Environmental History** Ways in which people have shaped and been shaped by the changing environments of North America from precolonial times to the present. Migration of species and trade in commodities; the impact of technology, agriculture, and industry; the development of resources in the American West and overseas; the rise of modern conservation and environmental movements; the role of planning and impact of public policies. Paul Sabin

**HIST 467Ja/HSHM 422a, Cartography, Territory, and Identity** Exploration of how maps shape assumptions about territory, land, sovereignty, and identity. The relationship between scientific cartography and conquest, the geography of statecraft, religious cartographies, encounters between Western and non-Western cultures, and reactions to cartographic objectivity. Students make their own maps. No previous experience in cartography or graphic design required. William Rankin

**HIST 913b/HSHM 713b, Geography and History** A research seminar focused on methodological questions of geography and geographic analysis in historical scholarship. We consider approaches ranging from the Annales School of the early twentieth century to contemporary research in environmental history, history of science, urban history, and more. We also explore interdisciplinary work in social theory, historical geography, and anthropology and grapple with the promise (and drawbacks) of GIS. Students may write their research papers on any time period or geographic region, and no previous experience with geography or GIS is necessary. Open to undergraduates with permission of the instructor. William Rankin

**LAW 20264, Urban Legal History: The Development of New Haven** Under what conditions do residents of a city succeed in cooperating to mutual advantage? This seminar will explore this question by focusing on the physical development of New Haven from 1638 to the present. Readings and class sessions will address, among other topics, colonial land allotments and the initial Nine Squares layout; private subdivisions, such as the one on Hillhouse Avenue; land assembly by Yale and others; the street network, the Green, and other public lands; the provision of public works such as the Farmington Canal, and of public goods such as water supply and street car service; and evolving controls on building quality and land use. Special attention will be given to New Haven's nationally conspicuous efforts, since 1940, to provide public housing, renew neighborhoods, and nurture a nonprofit housing sector. Paper required. To receive credit for satisfying the Supervised Analytic Writing requirement, a student must devote two terms to the paper. Enrollment limited to fourteen. R.C. Ellickson

**LAW 20415, Land Use** Land use law shapes the destinies of cities, the sprawl of suburbs, and the fates of rural lands. This course will examine the array of devices, legal and nonlegal, that governments, developers, and opponents of development employ to influence the land development process. Zoning regulations – the primary tool of public land use management and a frequent target of constitutional complaint – are a central focus. Also addressed are topics such as historic preservation, environmental impact reporting, homeowner associations, growth controls, and mechanisms for financing the urban infrastructure. This offering is designed to supplement Property, but that course is not a prerequisite. Scheduled examination. R.C. Ellickson

**LAW 30103 and 30131, Community and Economic Development Clinic and Fieldwork** Students must be enrolled in the seminar and fieldwork sections simultaneously. CED explores the role of lawyers and the law in building wealth and opportunity in low-income communities. The clinic focuses on issues of neighborhood revitalization, social entrepreneurship, sustainable development, and financial inclusion as they relate to community and economic development. Students in CED represent and partner with

community organizations, nonprofits, community development financial institutions, neighborhood associations, and small foundations. These client organizations share an interest in promoting economic opportunity and socioeconomic mobility among low- and moderate-income people. Students will represent clients in a range of legal matters including formation and governance of for-profit, not-for-profit, and hybrid entities; negotiating and drafting contracts; developing employment and other policies; structuring real estate transactions; resolving zoning and environmental issues; providing tax advice; drafting and advocating for legislation; and appearing before administrative agencies. CED engages students in local work that can then be used to inform policy development at the local, state, and federal levels. Students will gain skills in client contact, contract drafting, transactional lawyering, legal research and writing, regulatory and legislative advocacy, administrative agency contact, and negotiation. The class seminar will meet once a week for two hours and once a week for one hour and will cover federal, state, and local policies affecting urban and suburban places; substantive law in tax, real estate development, and corporate governance; and transactional and regulatory lawyering skills, such as negotiating and drafting contracts. Each student will meet with faculty once a week for fieldwork supervision. The clinic is open to students from the Schools of Law, Management, Divinity, Forestry & Environmental Studies, Public Health, and Architecture with prior approval from a faculty member. Permission of the instructors required. Enrollment limited to eight. A.S. Lemar, J.H. Brown, and C.F. Muckenfuss III

**LITR 294a/LAST 394a/PORT 394a, World Cities and Narratives** Study of world cities and selected narratives that describe, belong to, or represent them. Topics range from the rise of the urban novel in European capitals to the postcolonial fictional worlds of major Portuguese, Brazilian, and Spanish American cities. Conducted in English. K. David Jackson

**MGT 536b, Urban Poverty and Economic Development** Kate M. Cooney

**MGT 895a, International Real Estate** Kevin Gray