Study Areas and Course Descriptions, 2013–2014

In course titles, a designates fall term, b designates spring term, and c designates summer. [Bracketed courses are not offered in 2013–2014.] 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 focusing on principal turning points of thought and practice through to the nineteenth century is presented. George Knight, coordinator; Joyce Hsiang, Kyle Dugdale

1011a, Architectural Design 6 credits. (Required in M.Arch. I first year, fall term.) 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. Ben Pell, coordinator; Brennan Buck, Peggy Deamer, Joyce Hsiang, Eeva-Liisa Pelkonen

1012b, Architectural Design 3 credits. (Required in M.Arch. I first year, spring term.) 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, Joeb Moore, Herbert Newman

1013c, Building Project 3 credits. (Required in M.Arch. I first year, 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 2012 students enrolled in this course were required to work on the project from April 23 through June 22. For more information, see the section on the Building Project on the Web: www.architecture.yale.edu. Prerequisites: 1011a, 1012b. Adam Hopfner, director; Avram Forman

1015a, Visualization II: Form and Representation 3 credits. (Required in M.Arch. I first year, fall term. 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 in M.Arch. I first year, spring term. 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 103b, 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. John Eberhart, Ben Pell

1017c, Visualization IV: Processing and Presentation 3 credits. (Required in M.Arch. I first year, 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 2014 the course will be taught from May 12 until June 27. Prerequisites: 1015a, 1016b. John Foster Gage, coordinator; Sunil Bald, Martin Finio, Mimi Hoang, M.J. Long, Joel Sanders

1018a, Formal Analysis 3 credits. (Required in M.Arch. I first year, fall term; available as an elective for M.Arch. II and M.ED. students.) 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 in M.Arch. I second year, fall term.) This third core studio concentrates on a medium-scale institutional 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. Mark Foster Gage, coordinator; Sunil Bald, Martin Finio, Mimi Hoang, M.J. Long, Joel Sanders

1022b, Architectural Design 6 credits. (Required in M.Arch. I second year, spring term.) This fourth core studio, an introduction to the planning and architecture of cities, concerns two distinct scales of operation: that of neighborhood and that of the dwellings and the institutional and commercial building types that typically contribute to neighborhood. Issues of community, group form, 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; Keller Easterling, Alexander Felson, Bimal Mendis, Alan Plattus, Michael Young

1061a, Post-Professional Design Studio 9 credits. (Required in and limited to M.Arch. II first year, fall term.) 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

Advanced Design Studios (Fall)

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

1101a, Advanced Design Studio 9 credits. Elia Zenghelis, Davenport Visiting Professor

1102a, Advanced Design Studio 9 credits. Demetri Porphyrios, Kahn Visiting Professor

1103a, Advanced Design Studio 9 credits. Patrick Bellew and Andy Bow, Saarinen Visiting Professors; John Spence, Bass Distinguished Visiting Architecture Fellow

1104a, Advanced Design Studio 9 credits. Bijoy Jain, Foster Visiting Professor

1105a, Advanced Design Studio 9 credits. Peter Eisenman, Gwathmey Professor in Practice

1106a, Advanced Design Studio 9 credits. Marcelo Spina and Georgina Huljich, Kahn Visiting Assistant Professors

1107a, Advanced Design Studio 9 credits. Alan Plattus

Advanced Design Studios (Spring)

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

1111b, Advanced Design Studio 9 credits. Greg Lynn, Davenport Visiting Professor

1112b, Advanced Design Studio 9 credits. Pier Vittorio Aureli, Davenport Visiting Professor

1113b, Advanced Design Studio 9 credits. Deborah Berke, Bishop Visiting Professor

1114b, Advanced Design Studio 9 credits. Frank O. Gehry, Kahn Visiting Professor
This seminar examines the phenomenon of the book in architecture as both an array of preceding spring term. Proposals must include an abstract, a proposal, a bibliography, and approval by the Design and Rules Committees by the Friday of Jury Week for the 1199b, Thesis

Morris, Wigley, Kipnis, and Allen. Students are expected to formulate a formal thesis in aspects of form. Readings include Adorno, Greenberg, Krauss, Eisenman, Smithson, neo-constructivism, deconstructivism, neo-organicism, field theory, and the political defined by writers, artists, and architects after World War II. Topics include minimalism, 1214a, Architectural Form

Bulman

of the architect within a larger world of communication. The second part of the seminar project’s physical and conceptual composition as well as how each project acts as an agent production has with a selection of contemporary and historical practices, including each through case studies, the first portion of this seminar examines the relationship book

upon durability of message, the book remains the objet par excellence among media. Consequently, the building 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. In addition, the book finds itself in a privileged position as an instrument of discourse. 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. Limited enrollment. Luke Bulman

[1214a, Architectural Form 3 credits. The seminar explores the issue of Formalism as defined by writers, artists, and architects after World War II. Topics include minimalism, neo-constructivism, deconstructivism, neo-organicism, field theory, and the political aspects of form. Readings include Adorno, Greenberg, Krauss, Eisenman, Smithson, Morris, Wigley, Kipnis, and Allen. Students are expected to formulate a formal thesis in written form by curating an exhibit and writing a catalogue that justifies their choices in terms of both technique and effect. Limited enrollment. Not offered in 2013–2014. Edward Mitchell]

1215a, Inner Worlds: The Politics of Affect 3 credits. Affect is commonly understood as a personal emotion—precognitive and thus unspeakable, beyond the limits of discourse. Within our discipline, this dilemma is amplified by the residue of architectural phenomenology that linked emotion and bodily experience to reductive essentialism. These two critiques—that affect is nondiscursive and inherently conservative—are undermined by an “affective turn” in other fields. Over the past two decades, developments in philosophy, sociology, and neuroscience have redefined affect as a state or capacity beyond the individual and capable of influencing not only our moods, but also our ideas and our collective culture. This seminar examines contemporary ideas of what Nigel Thrift calls the “spatialities of feeling,” the nonrepresentational yet potentially political impact of the built environment. The first half of the course focuses on readings and discussion before shifting in the second half to individual investigations of existing public spaces conducted through analysis and drawing. Limited enrollment. Brennan Buck

1216b, Ornament Theory and Design 3 credits. This seminar reviews the major writings governing the identities of and distinctions between ornament and decoration in architecture, e.g., Owen Jones, Riegl, Sullivan, Goodhue, etc. Modernist actions against ornament are also examined. After individual student analysis of Victorian and art nouveau production, the focus is on the designing of ornament in twenty-first-century culture. Readings, exercises, individual final projects, and a portfolio are required. Limited enrollment. Kent Bloomer

1218b, Furniture Design and Manufacture 3 credits. The final product of this design class is a finished, working, full-scale piece of furniture, related to mass production manufacturing processes. This work is also to be understood as a part of the set of courses addressing the role that the direct consideration of materials contributes to architectural design. The required materials, sequences, and programs emerge from an effort to relate the work of this class to questions of process and materiality in architecture more generally. So the attitude toward materials and their assembly should be prejudiced toward those that to some extent mimic architecture. The emphasis is on common materials joined and formed using contemporary methods and processes to serve unique purposes in unusual contexts and adapted to new programs. Admission to this course is by permission of the instructor based upon a preliminary project proposal and prior experience. Prerequisites: 1015a and 1016b. Limited enrollment. Not offered in 2013–2014. Peter de Bretteville]

[1220a, On the Face of It: Computation and the Facade 3 credits. This seminar examines the reemerging concern with architectural representation through the discourse of geometry and computation. The building facade is the site of both performance (structural, environmental, and organizational) and politics (transparency, permeability, and fenestration). It orchestrates the building’s spatial relationships as well as engages with its social context. This seminar proposes that as architects have begun to engage with hands-on information processing, a set of sensibilities have simultaneously emerged that...
open up alternate modes of faciality. The dense pattern and expressed joints common to
county contemporary building skins perform at multiple scales and orientations beyond
front-to-back or top-to-bottom. Varying aggregations of panels and components pro-
duce relationships between the part and the whole, the one and the many, the individual
and larger social structures. Initially, the contemporary state of the facade is established
by examining its historical evolution and associated meanings in relation to theories of
perception, representation, and figuration. Students are asked to consider the facade from
the exterior as image and from the interior as performative skin. By synthesizing these
two agendas and by using the Grasshopper scripting interface (tutorials and consulta-
tion throughout the term are provided—no experience or particular software facility is
necessary), students redesign the facade of an existing building, reconstituting both its
performance as an environment and physical barrier and its presence as a graphic surface

1222b, Diagrammatic Analysis: Criticality after the Index 3 credits. While formal analy-
sis 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 con-
temporary 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 proj-
ects, such as Piranesi’s Campo Marzio, the modern architecture of Le Corbusier and
Mies van der Rohe, and contemporary buildings by OMA/Renzo Piano, 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

[1224a, 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
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, Dio-
cletian, 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; spec-
tacle; and other form-giving imperatives. Methods of site plan representation are also
scrutinized. Requirements include three significant readings, one major class presenta-
tion, 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, Disveled Geometries: Toward a New Rustication in Architecture 3 credits.
From the Latin rusticationem, and originally defining an unsophisticated rural mentality,
the term rustication is used to describe architecture’s most extreme category of surface
textures. If, historically, architectural rustication was seen as a less refined manner of
shaping material that subsequently retained a rough texture, then the twenty-first-cen-
tury condition would be the exact reverse. Rustication now takes more effort rather than
less, and skill is measured in moving away from architectural smoothness instead of
toward it. With the ability to parametrically, algorithmically, and fractally manage matter
at increasingly small scales of resolution, this seminar revisits the topic of rustication,
where architects design unapologetically contemporary textures that might act in the
service of everything from wind dispersal, shading, insulation, water shedding, grip,
power generation, physical defense, or pure aesthetic effect. Students study methods
of rustication throughout history and use this research as a foundation to design and
produce large-scale prototypes. Past seminars dealt with strategies involving carving
textures from large homogeneous masses and strategies of complex folding, contouring,
aggregation, interlocking, and effects involving new readings between texture and color.
This year’s seminar focuses on membranes formed from, and of, a variety of experimental
synthetic and biological sources. Students are expected to produce original work that
operates at the forefront of the profession, and, accordingly, do research to locate their
own work relative to that of a select group of contemporary experimental practitioners.
Limited enrollment. Mark Foster Gage

1229b, Display and Fabrication 3 credits. This seminar proposes the apparatus of display
as a site for architectural investigation. Beginning with a brief survey of the history of
display culture—from the development of the public museum and the department store
in the eighteenth and nineteenth centuries to more recent interest in mechanisms of
vision and surveillance—the seminar examines the changing role and increased visibility
of the apparatus in defining the relationships between observer and observed in various
contemporary contexts of display. At the center of this discussion is the nature of the
device itself and its potential to both mediate and generate content in ways particular
to small-scale and temporary installations. These issues are discussed through weekly
readings and case study analyses and explored at full scale through the ongoing design
and critique of display prototypes. Students develop strategies of production, material
effect, and interaction to identify ways in which the flexibility of digital fabrication can
enable a new engagement with conditions of excess, such as decoration and affect, that
would have been previously stripped away from systems of display based on standardized
production. The course culminates in a final design project and presentation. Limited

1230b, Patternism: Computation and Contemporary Continuity 3 credits. Over the last
two decades, digital form has energized Modernism’s neutral field to produce undulating
surfaces tense with potential energy. Topological surfaces, deployed at an architectural
scale, define spaces of constantly shifting size, proportion, and orientation. These surfaces are enabled by calculus rather than geometry and are characterized by vectors and flows more than stable points and planes. This seminar proposes that a formalism combining the continuity of topological surfaces and the articulation of tectonics, enabled by the precise modulation of computation, might catalyze a more diverse mode of formal continuity: pattern. After briefly establishing a theoretical foundation, the seminar focuses on exploiting the full potential of Grasshopper software. First through the lens of material flow (structural loads) and then through spatial experience, poles of repetition/redundancy/continuity on one hand and stochasticity/variation on the other hand are explored. By modulating the relationships between objects and spaces, the seminar investigates multilevel structural and spatial hierarchies—hierarchies of position, scale, and connection—while maintaining what Gregory Bateson called the great aesthetic unity that patterns produce. Limited enrollment. Brennan Buck

1233b, Assembly 3 credits. Digital fabrication has been theorized by Greg Lynn, Mario Carpo, Bernard Cache, and others as paradigmatic of both digital technology and contemporary commercial culture. This seminar focuses on the capacity digital fabrication opens up for architects to directly engage with manufacturing and construction techniques, to integrate fabricated mockups and material studies into the design process, and to gain greater control over the resultant construction. Using the collective design, production, and assembly of a full-scale pavilion sited on New Haven Green as the seminar’s framework, the course begins with a critical evaluation of the discourse surrounding digital fabrication and an intensive examination of a specific building material and its inherent physical properties and fabrication capabilities. Students individually produce design prototypes that by midterm inform a final collaborative design. The project is then developed through component fabrication and assembly studies during the second half of the term. The pavilion is finally produced in-house and assembled on the New Haven Green in May. Limited enrollment. Brennan Buck

[1232a, Graphic Inquiry 3 credits. This seminar examines how architects might use a wider array of communication processes—from text to image, from moving image to network and beyond—to describe, develop, and release their ideas strategically. The inquiry includes, but goes beyond, graphic tools to explore alternate models of knowledge creation; it is akin to research but is more open-ended in terms of its methodologies and possible outcomes. Architecture in this sense is seen in the context of a wide variety of other subjects. This seminar is structured in three parts, each one looking at a different communication medium and its effects: moving image, printed pamphlet, and a single surface/function web graphic. Each of these media implies different ideas of duration, attention, audience, and distribution and is explored through a series of activities: illustrated talks, readings, precedent studies, and three projects developed by each student. Limited enrollment. Not offered in 2013–2014. Luke Bulman]

1233a, Composition 3 credits. This seminar, consisting of weekly exercises, addresses issues of architectural composition and form. Leaving aside demands of program and site in order to concentrate on formal relationships at multiple scales, these exercises are intended to establish proficiency with “the language of architecture” as well encourage confidence in personal, formal proclivities. Students are responsible for their weekly designs as well as for critiquing the projects of their fellow students; the goal is not only formal and compositional dexterity but also eyes that can see the organizational paradigms at work in any piece of architecture. Limited enrollment. Peggy Deamer

1234a, Design Reconnaissance 3 credits. Significant advances in technology and material intelligences have ushered in an era of explosive innovation in virtually every discipline of design. In an effort to capitalize on these developments for architecture, this seminar proposes a new model of design research—that of the military reconnaissance mission—not into physical territories but rather into other industries. The sole purpose of such research is to discover innovative methods for creating, manipulating, and fabricating new genres of form and function for potential use in architecture. The course researches the tools and related expertise found in industries such as fashion, automotive and industrial design, robotics, jewelry design, and increasingly, biology and the manipulation of cellular structures. Students research design methods, tools, and materials specific to these disciplines and convert this newfound expertise into a series of self-determined research projects. Experts from these disciplines participate in the seminar throughout the term. A series of field trips is required to visit key figures and facilities from the aforementioned industries. Limited enrollment. Mark Foster Gage

1235b, Parts Is Parts: Component Production in Contemporary Architecture 3 credits. This seminar examines the component nature of architectural production, specifically at the interface between the customarily distinct practices of fabrication and construction. Looking at a range of historical and contemporary examples, the seminar explores ways in which constructional techniques and typologies have been both restricted and propelled by limitations of scale—often provoking new directions in design technique and production technology. Readings and case studies in the first half of the term are used to outline the history and theories of modern production practices, from 1851 to the present, and serve as the basis for a series of material studies to be produced at full scale. The course culminates in a final design project and presentation. Limited enrollment. Ben Pell

1237a, One to One: Furniture Design for the Architect 3 credits. Architects produce the idea of a building—to be built at full scale—through scaled drawings. In this seminar, students are asked to immediately work at full scale to design a functional prototype for sitting (chair, stool, or bench). Designs are refined iteratively through the considerations of aesthetics, function, cost, and the market, elements that inherently influence design resolution. All assignments include drawings at 1:1 scale, the only scale at which the structural and material limitations of a given design are encountered. Short case-study presentations examine architects influential to the history of furniture design, examining their iterative processes of creating furniture prototypes that reinforce their own architectural principles or aesthetics. The primary materials and material quantities used for the final project are finite, not to dictate formal consistency across projects, but rather to allow for group critiques of inventive joinery methods and material expression. Limited enrollment. Brian Butterfield

1238b, From Bogardus to 3-D Printing: Advanced Fabrication in Architecture 3 credits. Architectural practice has been profoundly affected by new tools of representation that are now leading ever more directly to both fabrication and actual erection of buildings, at the center of which are robotics and 3-D printers. Software has replaced the physical
“kit-of-parts” as the instrument of standardization, resulting in systems in which the parts are infinitely customizable. This has increased the necessity for architects to seriously consider the techniques and strategies of prefabrication. What are the architectural implications of this, and will a new language emerge? This seminar begins with five lectures: New Materials at the Turn at the Century; Cast Iron and Other Systems; Postwar Explorations 1940–55; Systems and Techno Fantasies of the 1960s and ’70s; and Emerging Methods, Robotics, and 3-D Printing. These lectures set the stage for the students’ research into materials and a system or systems that are presented to the class and that culminate in an illustrated paper as well as a 3-D printed model describing the system, including all of its components. Prerequisites: skills in 3-D printing. Limited enrollment. Peter de Bretteville

**1291c, Rome: Continuity and Change** 3 credits. (Open only to M.Arch. I second-year and M.Arch. II first-year students.) 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. Limited enrollment. Stephen Harby, Bimal Mendis, Alexander Purves

**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 or b, 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. Materials fee: $75. Michelle Lopez and faculty

**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 for all art majors. 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 for all art majors. Materials fee: $25. Clint Jukkala, Marie Lorenz (Sp), Samuel Messer, Robert J. Reed, Jr., William Villalongo, Anahita Vossoughi, Natalie Westbrook, and faculty

**ART 120a, Introductory Sculpture: Working with Wood** The focus of this course is on understanding wood technology and using machines and hand tools in the context of the studio. Students are introduced to the range of what sculpture might be. Assignments are designed to foster hands-on appreciation of materials and craftsmanship, as well as initiate awareness of the aesthetic and political implications of handmade objects in a digital world. Attention is paid throughout the course to understanding and articulating form in space, and to helping students develop personal ways of working alongside, and in response to, current issues in contemporary sculpture. Group discussions and presentations complement the studio work. The shops and the studio are available during class time and during days and evenings throughout the week. Enrollment limited to twelve. Materials fee: $75. Clint Jukkala

**ART 120a, Introductory Sculpture: Working with Metal** This course, focused on learning how to work with metal, introduces students to the range of what sculpture might be and explores creative approaches to perception, making, and critical analysis. Assignments are designed to foster hands-on appreciation of materials and craftsmanship, as well as initiate awareness of the aesthetic and political implications of handmade objects in a digital world. Attention is paid throughout the course to understanding and articulating form in space, and to helping students develop personal ways of working alongside, and in response to, current issues in contemporary sculpture. Group discussions and presentations complement the studio work. The shops and the studio are available during class time and during days and evenings throughout the week. Enrollment limited to twelve. Materials fee: $75. Julian Gilbert-Davis

**ART 121b, Introductory Sculpture: Working with Wood** This course, focused on learning how to work with wood, introduces students to the range of what sculpture might be and explores creative approaches to perception, making, and critical analysis. Assignments are designed to foster hands-on appreciation of materials and craftsmanship, as well as initiate awareness of the aesthetic and political implications of handmade objects in a digital world. Attention is paid throughout the course to understanding and articulating form in space, and to helping students develop personal ways of working alongside, and in response to, current issues in contemporary sculpture. Group discussions and presentations complement the studio work. The shops and the studio are available during class time and during days and evenings throughout the week. Enrollment limited to twelve. Materials fee: $75. Brent Howard

**ART 122a, Introductory Sculpture: Working with Time-Based Mediums** An exploration of how digital tools can inform the production of three-dimensional objects. The course includes workshops focused on digital photography, including digital RAW photography, video, editing, basic lighting, color correction, and ink-jet printing. The class
also introduces students to some basic woodworking and welding. Students develop projects in response to assignments focused on the intersection of digital processes with a variety of different materials and subjects. Enrollment limited. Materials fee: $150. Sandra Burns

ART 125a, Mold Making and Casting 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. Materials fee: $75. Carolyn Salas

ART 130a or b, Painting Basics An introduction to painting issues, stressing a beginning command of the conventions of pictorial space and the language of color. Class assignments and individual projects explore technical, conceptual, and historical issues central to the language of painting. Intended for students not majoring in art and for art majors outside the painting concentration. Students who intend to pursue the painting concentration, or take multiple courses in painting, should take Introductory Painting. Materials fee: $75. Natalie Westbrook and faculty

ART 122a 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. Materials fee: $150. Yeju Choi and Henk van Assen

ART 345a and 346b, Intermediate Sculpture 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. Materials fee: $75. Prerequisite: Art 132a or 132b, and Art 264a, or permission of the instructor. Pamela Hovland

ART 35b, Silkscreen Printing This course presents a range of techniques in silkscreen and photo-silkscreen, from handcut stencils to prints using four-color separation. Students create individual projects in a workshop environment. Materials fee: $150. Prerequisite: Art 114a or b or equivalent. Open to graduate students. Marie Lorenz

ART 356a, Printmaking Instruction in a diverse range of printmaking media. Students develop work in linocut, woodcut, collograph, drypoint, and etching. Both color and black-and-white printing methods are explored. Materials fee: $150. Prerequisite: Art 114a or b or equivalent. Open to graduate students. Natalie Westbrook

ART 368b, 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. Materials fee: $150. Prerequisites: Art 132a or b, and Art 264a, or permission of the instructor. Pamela Hovland

ART 444a, Advanced Sculpture This course provides the opportunity for a program of self-directed work in sculpture. Group discussion of student projects, and readings, slides, and video that address current art practice, are core to this class. Regular individual and group critiques monitor the progress of each independent project. Enrollment limited to twelve. Open to graduate students. Materials fee: $75. Prerequisite: Art 345a or 346b or equivalent, or permission of the instructor. Michael Queensland

DRAM 112a/b, Scene Design: Background and Practice An introductory course for all designers in conjunction with DRAM 102a/b. Ming Cho Lee, Michael Yeargan

DRAM 129b, History of Theater Architecture A survey of European and American theater architecture as it relates to cultural and technological changes through time. This course uses the writings of current and past authorities on such subjects as acoustics, space layout, and decoration to illustrate and evaluate these buildings’ many variations. Two hours a week. Open to nondepartmental and non-School of Drama students with prior permission of the instructor. Alan Hendrickson

DRAM 132a/b, Advanced Problems in Scene Design Criticism of design problems for plays, musicals, ballet, and opera. This course continues the work started in DRAM 112a/b, carrying it a step further and focusing on design realization. Prerequisite: DRAM 112a/b. Two hours a week. Ming Cho Lee, Michael Yeargan

MGT 828b, Creativity and Innovation Jonathan S. Feinstein

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 in M.Arch. I first year, fall term.) 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

2011b, Building Technology 3 credits. (Required in M.Arch. I first-year, spring term.) 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

2012b, Structures II 3 credits. (Required in M.Arch. I first year, spring term.) 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. Martin Finio, coordinator; Anibal Bellomio, Lisa Davey, Erleent Hartfield, Robert Haughney, Kristin Hawkins, Kenneth Gibble, Christian Hoenigschmid-Grossich, John Jacobson, Laurence Jones, Laura Pirie, Craig Razza, Edward M. Stanley, Philip Steiner, Adam Trojanowski

2031a, Architectural Practice and Management 3 credits. (Required in M.Arch. I third year, fall term. No waivers allowed.) The process by which an architectural design becomes a building requires the designer to control many variables beyond the purely aesthetic. This course provides an understanding of the fundamentals of organizing and managing architectural projects and examines accompanying issues of practice and the profession. Using the project process as an armature, lectures explore the role and function of the architect, the legal environment, evolving types of practice, fees and compensation, building project teams, and planning and executing a project. 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

2212a, The Liquid Threshold between Order and Chaos 3 credits. This seminar explores the fine line of equilibrium between what makes a structure work and what causes collapse. How do you know a structure is at its limit without witnessing failure? With this challenge, students test their designs to destruction by making and breaking simple structures refined to their optimum to resist compression, tension, shear, and bending. After exploring the failure mechanisms of simple elements, the seminar investigates and tests more complex three-dimensional systems to develop a deeper understanding of structural form. The course combines class discussions and workshops to examine a series of projects (including some of the instructors’ own) in which failure is imminent or has occurred. Through this discussion, the class explores where structures are vulnerable and how they can be enhanced. Limited enrollment. Not offered in 2013–2014. Neil Thomas, Aran Chadwick]

2213b, Architecture as Building 3 credits. This course analyzes the major buildings of this century through detailed dissection of their methods of construction. Graphic display of the major systems that make up a contemporary work of architecture allows for a reconstruction of the design process and reestablishes the thought patterns that formed the design priorities. Emphasis is on the relation of systems of structure and enclosure with the required technical systems. Limited enrollment. Not offered in 2013–2014. Thomas Beeby]

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, and two built projects are required. Limited enrollment. Deborah Berke

2217a, Material Formation in Design 3 credits. This course presents historical, contemporary, and emerging methods of material formation from a designer’s perspective. Emphasis is placed on processes useful for custom architectural fabrication, especially those that enable students to capitalize on opportunities generated by computer-aided design and manufacturing (CAD/CAM). Distinctions between direct and indirect making are emphasized in terms of the formal freedom various techniques afford designers. Students are encouraged to cultivate specific aesthetic interests and experiment with the translation of variations into a series of material prototypes in order to benchmark results and better inform their own design process going forward. Limited enrollment. Kevin Rotheroe

2217b, 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 2013–2014. Michelle Additiongton

2219b, Craft, Materials, and Computer-Aided Artistry 3 credits. This course reviews materials and computer-aided 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 generates 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 Additiongton

2221b, Ornament and Technology 3 credits. This course examines contemporary interests in digital fabrication relative to the historically complex relationship between technology and the production of ornament and decoration. The seminar surveys the history of ornament from 1891 to the present in order to identify various, and often conflicting, definitions of the term and to examine a series of diverse case studies. The intention is to outline the potential for digital fabrication to contribute to renewed considerations of the decorative in contemporary architecture, by exploring strategies of figuration, organization, and technique to which these technologies can be readily applied. The course begins with a series of weekly readings, presentations, and case study analyses, and culminates in a final design project and presentation. Limited enrollment. Not offered in 2013–2014. Ben Pell]
[2224b, Issues in Contemporary Practice] 3 credits. This course, in weekly seminars with practitioners from architecture and related fields, addresses the broad view of practice beyond core design and the practicalities of running architectural projects. Topics discussed answer such questions as what firms look for when they hire recent graduates; how clients select architects; how architects find commissions; how projects get publicized and published; what are the keys to selecting and working with good collaborators like engineers, consultants, and contractors; how to start your own practice; and how to work with owners and developers. Limited enrollment, available only to graduating M.Arch. I and M.Arch. II students. Not offered in 2013–2014. John Apicella, Phillip Bernstein]

[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 demonstrated a 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. Faculty

[2229a, Timber and High-Performance Wood Technology] 3 credits. This seminar explores recent innovations in forest management and timber construction technology and considers their implications for architectural technique and building morphology. By traversing scale, from the engineering of wood fiber in structural members to the development of a timber-structured, high-density, high-rise urbanism, and by spanning the material life cycle of wood, from silvicultural practice to the disassembly and reuse of timber buildings, students investigate newfound capacities and applications of wood as a high-performance construction material and assess its impact on both the local and global ecologies. Through examination of the history and current science of silviculture, evolving methods of timber extraction, the development and processing of structural wood products, and their application in a range of timber building assemblies, this seminar evaluates the potential of engineered wood as a primary structural material in unconventional applications and assesses its impacts—relative to alternative material systems—in terms of land use, energy consumption, and greenhouse gas emissions. In the latter half of the course, students develop research projects on selected topics in three phases: as an oral presentation, a written paper, and a quantitative assessment or development of an experimental prototype. Limited enrollment. Not offered in 2013–2014. Alan Organschi]

[2230b, Exploring New Value in Design Practice] 3 credits. How do we make design a more profitable practice? Design practice 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. Limited enrollment. Phillip Bernstein, Brian Kenet

[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.

F&ES 200a/EVST 200a, Geographic Information Systems A practical introduction to the nature and use of both image-based (raster) and drawing-based (vector) geographic information systems (GIS) in environmental science and management. Applied techniques for the acquisition, creation, storage, management, visualization, animation, transformation, analysis, and synthesis of cartographic data in digital form. Two hours lecture, problem sets, one major class project. No previous experience required. Dana Tomlin

F&ES 600b, Linkages of Sustainability The Earth system is made up of interdependent components—land, water, energy, biota, and nonrenewable resources, all of which have physical limits. Societies transform these resources into useable goods, and production and consumption cycles connect people and places across space and time. This team-taught course provides an overview of these linkages and explores their implications for applying and measuring the concept of sustainability. It examines the constraints to sustainability imposed by those linkages (e.g., the energy required to supply water), opportunities for their transformation, and challenges of implementing sustainability across complex social and cultural systems. Lecture and discussion. Thomas E. Graedel, Karen Seto

F&ES 753b, 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 interspersion) 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. 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 interspersion). Three hours lecture, problem sets. No previous experience is required. Dana Tomlin

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 federalism 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 in the United States encompasses the interacting factors of land ecological function, building design, economic development, and community support. Planning for land use and techniques used to implement these plans determine where development occurs on the American landscape. This plays a key role in determining how the needs of the nation’s growing population for housing and nonresidential development are accommodated and how natural resources and 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. Land use strategies identify land functions, incentivize energy-efficient and climate-resilient structures, and harness community and market support for effective land use decision making. When done well, land use planning possesses the capacity to maximize utility while minimizing environmental damage. 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 curriculum concentration in land use. Guest speakers are professionals involved in sustainable development, land conservation, smart growth, and climate-change management. Classes focus on current issues in domestic land use and include discussion on the trajectory for professions and career paths in this sector. John R. Nolon

F&ES 855a, Climate Change Mitigation in Urban Areas  This class provides an in-depth assessment of the relationships between urbanization and climate change, and the central ways in which urban areas, cities, and other human settlements can mitigate climate change. The course explores two major themes: (1) the ways in which cities and urban areas contribute to greenhouse gas emissions and climate change; and (2) the ways in which urban areas can mitigate greenhouse gas emissions and climate change. Class topics parallel the IPCC 5th Assessment Report, Chapter 12, Human Settlements, Infrastructure, and Spatial Planning, and include spatial form and energy use, land use planning for climate mitigation, urban metabolism, and local climate action plans. The class format is lecture, short break, and discussion. Not offered in 2013–2014. Karen Seto

LAW 20316,21321/F&ES 970a,b, Environmental Protection Clinic  A clinical seminar in which students will be engaged with actual environmental law or policy problems on behalf of client organizations (environmental groups, government agencies, international bodies, etc.). The class will meet weekly, and students will work eight to ten hours per week in interdisciplinary groups (with students from the School of Forestry & Environmental Studies and other departments or schools at Yale) on projects with a specific legal or policy product (e.g., draft legislation or regulations, hearing testimony, analytic studies, policy proposals) to be produced by the end of the term. Students may propose projects and client organizations, subject to approval by the instructors. Enrollment limited to thirty. A. Clements, J.U. Galperin, and L. Suatoni

LITR 417b, Maps and the Western Literary Imagination  The influence of mapping and changing notions of space on literary form, from the cartographic revolution of the sixteenth century to the modern spatial-digital revolution of GPS mapping. Spatial literacy in verbal and visual texts; maps in books and as books; literary uses of mapping practices; recent literary theory on the spatial turn. Works by Camões, Montaigne, Spenser, Milton, Pynchon, Walcott, and Chamoiseau. Use of the map collections in Yale’s Sterling Memorial and Beinecke libraries. Ayesha Ramachandran

HISTORY AND THEORY

Keller Easterling and Eeva-Lisa 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. 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 that fulfill the History and Theory elective requirement; one of these electives should be in a non-Western subject. All elective courses in this study area, unless otherwise noted in the course descriptions, fulfill the History and Theory elective requirement. In addition, provided a fifteen-page research paper is required, the elective courses 1214a, 4211a, 4212a, 4213a, 4214a, 4216a, 4217b, 4222a, 4223b, 4229a, 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. Elective courses in this study area do not require a fifteen-page paper, or in which a student elects to do a project in lieu of a research paper, do not fulfill the History and Theory elective requirement. 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.

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 in M.Arch. I first year, fall term; 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 in M.Arch. I second year, fall term; 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 in M.Arch. I second year, spring term; and in M.Arch. II and M.E.D. first year, spring term.) 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. Ariane Lourie Harrison

3071a, Issues in Architecture and Urbanism 3 credits. (Required in and limited to M.Arch. II third term.) 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 in and limited to M.E.D. first year, fall term.) 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. Eva-Lisa 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 in and limited to M.E.D. 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/neomarxism’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 Zizek, 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 2013–2014. Peggy Deamer]
3214b, The Construction of Exactitude: Classicism and Modernism 3 credits. This seminar critically considers modern classicism not only as a compositional design method and as an evocation of precedents, but also as a language of clarity, reduction, and economy resistant to an unquestioned avant-gardist predilection for the “new.” Beginning with the fixed principles that were the legacy of nineteenth-century French and German Neoclassicism (unity, symmetry, proportion), the seminar continues up through the Rationalism and Formalism that followed the Second World War. Issues explored include the concepts of the ruin and monumentality; the Modern Movement’s analogies to the classical; and the representation of interwar national and political ideologies. Works studied include those by architects, literary/artistic figures, and theorists such as Richardson, Garnier, Perret, Le Corbusier, Rossi, Asplund, Lutyens, Terragni, Speer, Mies, SOM, Kahn, Valéry, Gide, de Chirico, Calvino, Rowe, Krier, Eisenman, Stern, Porphyrios, and Colquhoun. Limited enrollment. Karla Britton

[3216b, Case Studies in Modern 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 Catherine Bauer, Alan Colquhoun, Henry-Russell Hitchcock, Ada Louise Huxtable, William Jordy, Rem Koolhaas, Lewis Mumford, Colin Rowe, Vincent Scully, and Manfredo Tafuri. 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. Not offered in 2013–2014. 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

3218a, Sustainability for Post-Humans: Architectural Theories of the Environment 3 credits. This seminar poses post-humanist alternatives to the conceptual constraints and aesthetic limitations imposed by static interpretations of sustainability. Post-humanism envisions radically different boundaries than those that have traditionally governed the interaction between politics, bodies, buildings, and the environment. Grounded in analysis of texts and case studies, the seminar investigates contemporary architectural responses to post-humanism’s challenge to identity, politics, and subject formation. Limited enrollment. Not offered in 2013–2014. Ariane Lourie Harrison]

3220b, Contemporary Architectural Discourse Colloquium 3 credits. Organized by second-year M.E.D. students in collaboration with the director of M.E.D. Studies, this year’s colloquium invites a series of noted architects, designers, artists, historians, environmentalists, preservationists, scientists, cartographers, and geographers to revisit the critical framework set by Charles and Ray Eames’s documentary Powers of Ten, a film that looked at the environment sequentially from the large scale of the globe to the scale of the atom in order to speculate how these different scales help us understand the complex set of relationships that exist among individuals, society, nature, and the built environment. This seminar examines such questions as: How can we think about and represent architecture as being part of both natural and man-made environments? At what scales does this interaction happen? How do public policy and law impact this relationship? Limited enrollment.

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 its history. 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. Robert A.M. Stern

3224b, Architecture: Fragment and the Absolute 3 credits. This seminar investigates the theoretical underpinnings of the diverse strands of formalism in the architectural discussion of the 1970s and early 1980s. Passing from the analysis of structural theories of form, to its semantic configurations, and to its post-structuralist displacements, the seminar sheds light on the intellectual trajectory of a specific historical period after Modern architecture and within modernism. Special emphasis is given to the discussions around the Oppositions group and to the influence of French philosophy on formalist architecture. The second half of the seminar relates the proposed topics to built architectural artifacts, and thus stresses the mutual interdependence of physical object and architectural theory. The seminar analyzes how formalist transformations build relationships to modernist precedents from which to “swerve.” Limited enrollment. Emmanuel Petr

3225b, Religion and Modern Architecture 3 credits. The design of religious architecture challenges the creative capacities of prominent architects, yet this domain has largely gone unnoticed within the field. In an inter-religious and inter-disciplinary context, this seminar offers a fresh examination of the history of modern architecture through a close analysis of a single building type—the religious building (mosques, churches, synagogues, and temples). Drawing on guest speakers, this course opens a discourse between the disciplinary perspectives of philosophy, theology, liturgical studies, and architectural history and theory on the influence religion has come to exert in contemporary civic life,
and the concretization of that role in the construction of prominent religious buildings. Questions addressed include: 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? How are concepts of the ineffable realized in material form? Architects discussed included Perret, Peclin, Lutyens, Wright, Le Corbusier, Mendelsohn, El-Wakil, Tange, Kahn, Ando, Barragan, Moneo, Eisenman, Hadid, and Shim. Limited enrollment. Karla Britton

[3226b, Lateral Strategies: Architecture and Activism 3 credits. This seminar researches architecture and activism. Some of the most radical changes to the globalizing world are written not in the language of law and diplomacy but rather in the language of architecture and urbanism. The notion that there is a proper furtive realm of political negotiation usually acts as the perfect camouflage for consequential activity that resides in the unofficial currents of cultural and market persuasion. This seminar tutors spatial entrepreneurialism, impure ethical struggles, and a new species of spatio-political activism. In sequential weeks, the seminar considers these in relation to a topic and two thinkers. Activism and: piracy (Sloterdijk, De Certeau), comedy (Criticley, Goffman), entrepreneurialism (Banham, Price), law (Agamben, Balibar), organization (Meyer, Castells), aesthetics (Ranciere, Bourriaud), polity (Mattelart, Latour), sovereignty (Habermas, Retort), violence (Virilio, Guattari), ethics (Badiou, Levinas). Limited enrollment. Not offered in 2013–2014. Keller Easterling]

3228b, The Autobiographical House 3 credits. Architects and artists have long built dwellings for themselves (and for surrogate clients) as showcases of their art, sites of collecting and teaching, and as retreats from professional life. From Thomas Jefferson to Philip Johnson, from John Soane to Eileen Gray and Frank Gehry, building a house of one’s own often harks back to Renaissance models while experimenting with new manifestations of the architect’s evolving role. This seminar examines key examples of buildings as well as wide-ranging readings in autobiography. Limited enrollment. Kurt W. Forster

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

3231b, Art in Architecture 3 credits. Architecture’s changing coalitions with the sister arts have been an important factor of its evolution since the Renaissance. Ignoring or actively severing that connection has been one way for functionalism to break away from historicism and to engage in new forms of interactions with the sciences and with social dynamics. As a result, the call for a “Synthesis of the Arts” as promoted by CIAM after World War II is but one theme within a wide spectrum of promiscuity that characterizes the condition of architecture in its relation to painting, sculpture, and other forms of artistic and visual practice ever since. Introductory classes on Le Corbusier, the Smithsons, Venturi and Scott Brown, Koolhaas, Herzog & de Meuron, and other architects examine the role of surrealism, art brut, conceptual art, pop art, or minimalism, and their related philosophies in shaping the ways architects organize, discuss, and promote their work. Independent student work also focuses on more recent artistic experiences and the way they, in turn, have internalized concepts borrowed from architecture. Limited enrollment. Stanislaus von Moos

3233b, Venturi, Scott Brown & Associates in Context 3 credits. This seminar examines a choice of projects and buildings by Venturi, Scott Brown & Associates in the light of such issues as mannerism, historicism (and neo-historicism), Modernism in architecture, as well as contemporary strategies of urban design. Students are expected to present their own analysis of a chosen built or unbuilt Venturi, Scott Brown & Associates project against the background of relevant issues in architectural and/or urban theory, social sciences, or contemporary art and to consider these architects’ own theoretical writings. Non-written forms of presentation (tapes, etc.) are also encouraged. Limited enrollment. Not offered in 2013–2014. Stanislaus von Moos]

3237a, 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. 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 Makô, Isozaki, Ando, Ito, Kuma, and SANAA. 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. Yoko Kawai

3242a, The Digital Turn: A Cultural History 3 credits. This seminar discusses the present state of computer-based design and fabrication by situating today’s digital turn within the long duration of the history of cultural technologies. It assesses the technical logics of hand-making, mechanical reproductions, and digital making, focusing on the invention of architectural notations and of architectural authorship in the Renaissance. The seminar then outlines a tentative history of the digital turn from the early 1990s—from the Deleuzian fold to free-form, topology, and formalism; from mass customization and nonstandard seriality to recent developments in digital interactivity, building information modeling, self-organizing systems, and digital form-finding—questioning in particular the digital reversal of the early–modern and modernist principles of agency in architectural design and probing the import and consequences of these trends for contemporary practice. Students test these interpretive patterns by developing a case study of their choice (of a media object, object, building, software, or technology). Limited enrollment. Mario Carpo

3242b, Cold War Urbanism: The Case of Berlin 3 credits. Berlin’s precarious status between East and West has made this city into a prime urbanistic laboratory ever since reconstruction after World War II began. After a brief period of East-West collaboration, East Berlin became the capital of the newly founded German Democratic Republic in 1949, whereas West Berlin turned into a de facto part of West Germany and developed into a showcase of capitalist prosperity and pluralism. The seminar examines the diverging urbanistic strategies embodied in such key sites as Karl-Marx-Allee and Alexanderplatz in East Berlin or Kaiser-Friedrich-Gedächtniskirche, Südliche Friedrichstadt, or the reconstruction of the Hansaviertel in the West as a background to the seminar’s main topic: the Internationale Bauausstellung in Berlin, 1984–86 (IBA). The controversial promotion of the “Critical Reconstruction” of the traditional city as a system of closed blocks that became an official dogma after the reunification of the two Germans in 1989 is discussed together with the ideas on alternative scenarios that had preceded it. Limited enrollment. Not offered in 2013–2014. Stanislaus von Moos

3242a, 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 15-page paper elaborating on the presentation topic. Not offered in 2013–2014. Peggy Deamer

3245a, From Open City to Postmodern City: Architecture and Urbanism in Italy, 1945–1980 3 credits. The seminar examines the complex relationship between architecture and urbanism in Italy in the second half of the twentieth century. From the neorealist city in post-WWII Rome to the presentation of a postmodern city in the 1980 Venice Biennale, the seminar explores the ways that Italian architects and theorists proposed architectural practices and urban studies as a single or interdependent conceptual process. Weaving
theoretical arguments with design strategies, the seminar—structured as a series of chronological case studies—traces how Italian architects and theorists articulated architecture and urban form in their attempt to address the themes of reconstruction, context, tradition, territory, disciplinary autonomy, consumerism, ideology, and history that made the Italian discourse one of the protagonists in the architectural debates of the second half of the twentieth century. Focusing on primary sources, students have the opportunity to study magazines, seminal theoretical works, and the catalogues of exhibitions that constituted the main vehicles of the Italian architectural discourse in this period. Limited enrollment. Not offered in 2013-2014. Marta Caldeira]

3248b, Schinkel and the Creation of a New Urban Topography 3 credits. The Berlin architect Karl Friedrich Schinkel, widely traveled in Europe and in close touch with architects from France to Russia, England, and Italy, helped reshape the city of Berlin by means of numerous inserts and partial expansions, creating new types of public buildings, spaces, and parks. Schinkel’s pictorial invention—his panoramas, theaters, and residences—reconfigured the scenario of the city. This seminar attempts to grasp his ideas of topography, landscape, and culture at a time of swift transformation of the European city. Students are required to give in-class presentations and write a substantial paper. Limited enrollment. Kurt W. Forster

3249b, Exhibiting Architecture 3 credits. This seminar traces the legacy of radical architecture exhibitions used by architects as laboratories to test new formal, spatial, and technological ideas throughout the twentieth century. Using the Beinecke Rare Book and Manuscript Library’s holdings on modern prints and manuscripts as source material, students learn to conduct primary archival research while working on exhibition installations and concepts conceived by leading modern architects (e.g., Le Corbusier, Mies van der Rohe) as well as by groups of architects (e.g., Archigram, Superstudio, Utopie) at various institutional, cultural, and historical settings. As a final project, students work collectively toward a publication and an exhibition on the topic. Limited enrollment. This course does not fulfill the History and Theory elective requirement. Eeva-Liisa Pelkonen

3252b, Exhibitionism 3 credits. Art and environment are interdependent. This course explores the complex relationship between artistic practices and gallery design, reciprocal terms that shape a spectator’s visual and physical encounter with works of art. The first part of the class provides a historical overview of the development of exhibition spaces in conjunction with parallel chapters in the history of art including the Renaissance palace, the nineteenth-century museum, and the Modernist white cube. The second part considers the critique launched by postwar artists and critics around questions of autonomy, embodiment, and politics that resulted in a range of techniques from installation to performance that actively transform spaces of display. The class concludes by speculating about the future of gallery and museum architecture as curators respond to market pressures (global branding, star-architecture) and the mandate to exhibit new artistic mediums (video, digital, interactive, and performance). Limited enrollment. Not offered in 2013–2014. Joel Sanders]

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 2013–2014. Peggy Deamer]

3257b, Techno-Sensations: Architecture, Technology, and the Body 3 credits. Since the Enlightenment, the introduction of new technologies has expanded the capacity of the human senses: audiovisual devices from the camera obscura to iPhones have enhanced the eye and ear while infrastructures like plumbing and HVAC have catered to the needs of the flesh. This class considers the architectural consequences of these technological developments and their impact on our sensory experience of space. Looking at this subject from a sociohistorical perspective, the course considers how a series of technical milestones transformed architecture and the human sensorium from the Enlightenment to the Digital Age. 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; and the impact of two generations of digital devices—desktop computers and mobile handheld devices—on human interaction in public and private space. After charting these historical developments, students speculate about the future: how can architects harness new technologies to craft immersive multisensory environments that engage sight, hearing, and touch? Not offered in 2013–2014. Joel Sanders]

3258a, Whole Dichotomy: Reconsidering the Iconographic and Representational Nature of Monolithicity in Architecture 3 credits. Used by Rodolfo Machado and Rodolphe el-Khoury in 1995 to describe a series of projects that deliberately did not articulate a part-to-whole relationship as dictated by classical doctrine, “monolithic architecture” became the predominant architectural form of the “avant-garde” in the past two decades. The monolithic project is identified by its iconography, latent muteness, scalar ambiguity, and indifference to both program and context. This seminar aims to elucidate the critical lineage and contemporary relevance of monolithicity in architecture by revisiting some of its most relevant contemporary and historical examples. Considering that as a productive allegory, the use of the term monolithic in architecture relates more to problems of representation than to those of construction or material assembly, students are asked to analyze, theorize, and generate alternative instantiations for “monolithic” projects. Biweekly readings and two in-class, student presentations are required. As a final assignment, each student or group of students is required to prepare a diagrammatic
overview of method and theory in settlement and landscape archaeology; field methods to the archaeological study of ancient settlements and landscapes. Topics include an introduction to transnational, national, and local identities. Douglas Rogers.
HSAR 383b/SAST 256b, Art of India, 300 B.C.–A.D. 1650 Introduction to the art and architectural history of the Indian subcontinent from the rise of the Mauryan Empire to the building of the Taj Mahal. The development of early Buddhist and Jain art and of Hindu temples and icons; the efflorescence of Islamic visual culture under the Mughal Empire. Tamara Sears

HSAR 424b/ARCG 424b/CLCV 230b, cClavdia: Women in Ancient Rome The contributions of Roman women to one of the greatest cities—and one of the greatest empires—in world history. Lost stories of real-life Roman women recovered from public and residential buildings, portraits, paintings, and other works of Roman art and architecture. Diana Kleiner

HUMS 223b/LITR 241b/RUSS 332b, City and Country in the Nineteenth-Century Novel A study of the thematic, aesthetic, and historical significance of the city and the country in the nineteenth-century European novel. Topics include the idyll and urban development, social mobility, travel and transportation, landscape painting, and literary narrative and spatial organization. Analysis of novels by Dickens, Balzac, and Tolstoy, as well as historical documents, visual materials, and theoretical texts. Readings and discussion in English. Molly Brunson

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

HUMS 447b, Sacred Architecture and the Contemporary City Study of sacred architecture in urban contexts from World War II to the present. Ways in which the sacred has been given expression in material form in complex urban societies. The religious building as a representation of cultural heritage, challenges of faith, and civic space in a pluralistic world. Case studies from the United States, the Middle East, Japan, Europe, and Latin America. Karla Britton

URBANISM AND LANDSCAPE
Alan Plattus and Elihu Rubin, 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 3337a will satisfy the Urbanism and Landscape elective requirement, although it cannot satisfy 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 in M.Arch. I first year, spring term.) 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 New Haven and other cities. Alan Plattus, Andrei Harwell

4021a, Introduction to Planning and Development 3 credits. (Required in M.Arch. I second year, fall term.) 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, STCV 176b, or equivalent course work. Limited enrollment. Alexander Garvin

4212a, American Cultural Landscapes: An Introduction to the History of the Built Environment 3 credits. After a brief review of Native American and colonial settlements, this lecture course surveys the growth of towns and cities between 1800 and 1920, then examines the shift between 1920 and the present, when residential and commercial activities move away from city centers into diffuse, automobile-dependent metropolitan regions. Students complete one brief writing assignment and one fifteen-page paper. Dolores Hayden

4213a, Gender, Territory, and Space 3 credits. This seminar explores women’s and men’s everyday experiences of built environments and the city and considers how gender (along with race, class, age, and sexual orientation) affects the design and use of a range of spaces from the most private to the most public. The main focus is on the United States from the late nineteenth century to the present, but other countries offer examples.
of built projects fostering full citizenship or practices of spatial segregation that deny basic civil rights. Readings are drawn from architecture, history, gender studies, and geography. Students are required to present papers. Limited enrollment. Not offered in 2013–2014. Dolores Hayden]

4214b, Built Environments and the Politics of Place 3 credits. Call it the built environment, the vernacular, everyday architecture, or the cultural landscape, the material world of built and natural places is intricately bound up with social and political life. This research seminar explores research methods and sources for writing the history of the built environment, including maps, aerial and ground photographs, planning documents, landscape analysis, and GIS. It includes readings from history, geography, anthropology, and architecture as well as readings on narrative and graphic strategies for representing spaces and places. Students present papers. Sections from longer theses or dissertations in progress are welcome. Dolores Hayden

4216a, Globalization Space: International Infrastructure and Extrastatecraft 3 credits. This lecture course researches global infrastructures as a medium of transnational policy. 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 politics 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

4217a, Suburbs 3 credits. American downtowns have declined in size and influence since 1920 as suburbs have come to dominate urban regions. After considering the history of diverse suburban landscapes, this seminar explores definitions of sprawling link impoverished inner-city areas to growth on metropolitan fringes. Representations of suburban built environments in photography, films, and literature are examined. A research paper of 20–30 pages (or an alternative documentary or public humanities project) is required. Limited enrollment. Dolores Hayden

4219b, 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

4221a, 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 standpoint 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 inter-relationship 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. 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 made. Limited enrollment. Bryan Fuermann

4223b, History of British Landscape Architecture: 1600 to 1900 3 credits. This seminar examines the history of landscape architecture and of the idea of nature in Britain from 1600 to 1900. Topics of discussion include Italian and French influences on the seventeenth-century British garden; the Palladian country house and British agricultural landscape; Capability Brown’s landscape parks as national landscape style; garden theories of the picturesque and of the 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 are emphasized 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

4226a, Ecological Urban Design 3 credits. Ecologists are increasingly interested in studying urban systems and have recently moved beyond the traditional focus from “ecology in cities” to “the ecology of cities.” This shift has catalyzed a new discourse in urban ecology, which has given rise to a number of questions: How do we define urban
ecosystems? How do we combine science, design, and planning to shape and manage urban ecosystems? How do we implement effective and adaptable experimental and monitoring methods specific to urban sites and human subjects in order to conduct viable urban ecological research? Exploring these questions requires designers and ecologists to achieve more familiarity with each other’s areas of expertise including research methods and the scientific process as well as the design process. This seminar focuses on the application of urban ecology to the design of cities. The course provides an overview of urban ecology and how designers and scientists can work in complementary ways to foster dialogue and integrate ecological research and analysis with city planning and design. The course seeks to reposition urban ecology as a practice not only focused on studying urban ecosystems but also on a combined effort to study and reshape them. Limited enrollment. Not offered in 2013–2014. Alexander Felson

[4230a, Topics in Chinese Landscape, Architecture, and Urbanism] 3 credits. This seminar introduces major themes in the history and theory of the Chinese built environment in relation to the core typologies of Chinese architecture and the history of the city of Beijing. Specific buildings, gardens, and junctures in the city’s development (important historical, cultural, and architectural markers) are used as an armature for building a layered understanding of this city both as it was, is now, and is fast becoming. Topics considered include: Beijing as the apotheosis of the walled imperial city type, the identification and mapping of this system’s persistent structures, the module of the courtyard, and the subsequent account of the loss of cultural values and the critical discourse surrounding a denatured aesthetics of the sublime are also explored. Students are expected to present material and participate in discussions of the readings as well as submit a final paper. Limited enrollment. Not offered in 2013–2014. Edward Mitchell

[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

[4233a, 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. Elihu Rubin

[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 MArch 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.

AMST 348a, 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 429a/ANTH 404a, American Communities Consideration of the concept of community and an examination of various kinds of communities—ranging from those defined by social proximity to those defined by a common experience or ideology—that are part of the American experience, in order to understand the value Americans place on community itself, and the ways in which the pull of individualism exacts a toll on that commitment. Kathryn Dudley

AMST 483a, Urban Public Spaces The production, representation, use, and transformation of urban public spaces, with a focus on the contemporary United States. Relations...
to evolving practices of citizenship, the workings of democracy, and dynamics of power. Meanings of public space for community and everyday life; power and resistance; art, theater, and performance; the work of community organizations. Includes field projects in New Haven. Laura Barraclough

ANTH 710a/ARGG 710a, Archaeology of Settlements and Urbanism 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

BRST 191b, Visual Sociology in London An introduction to the field and methods of visual sociology, with particular reference to the opportunities provided by the city of London. Humanistic and more positivist approaches to the study of images, objects, and settings. Ethnographic photography, autophotography, and analysis of existing images; study of visibility, ordering and display in objects, and spaces and public life. Philip Smith

CPLT 592a/GMAN 645a, Benjamin’s Arcades: The Modernization of Nineteenth-Century Paris The radical modernization of Paris under the Second Empire (1851–70) was, for Walter Benjamin, Europe’s key moment in preparation for the innovations and horrors of twentieth-century life. His monumental Arcades Project is a compendium of materials, mostly by others and not unlike a Web site, chronicling such developments as Parisian mass transit and streamlined traffic, the construction of apartment houses, and the dissemination of mass media over this period. Examining this work closely serves as a base camp to some of the key literary artifacts showcasing the same events (Balzac, Zola, Aragon), and to focused theoretical investigations into twentieth-century media and urbanization. Course work segues out from the nexus of historical, literary, architectural, media, demographic, and theoretical concerns assembled unforgottiably by Benjamin. Henry Sussman

EAST 242a/EALL 285a/FILM 382a, Home and Country in Chinese Cinema Visions and representations of home and nation in Chinese film from the 1930s to the present. The construction of utopian or monumental visions; representations of the destruction of an ideal, often manifested as sites of ruins or as memorials of loss, erasure, and eclipse. Relations between Chinese cinema and modern Chinese history. Mia Liu

F&ES 600b, Linkages of Sustainability The Earth system is made up of interdependent components—land, water, energy, biota, and nonrenewable resources, all of which have physical limits. Societies transform these resources into useable goods, and production and consumption cycles connect people and places across space and time. This team-taught course provides an overview of these linkages and explores their implications for applying and measuring the concept of sustainability. It examines the constraints to sustainability imposed by those linkages (e.g., the energy required to supply water), opportunities for their transformation, and challenges of implementing sustainability across complex social and cultural systems. Lecture and discussion. Thomas E. Graedel, Karen Seto

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 802b/MGT 682b, Valuing the Environment This quantitative course demonstrates alternative methods used to value environmental services. The course covers valuing pollution, ecosystems, and other natural resources. The focus of the course is on determining the “shadow price” of nonmarket resources that have no prices but yet are considered valuable by society. Taught every other year. Three hours lecture. Robert Mendelsohn

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 four 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 three courses in the subset are F&ES 775b, 820b, and 835a. 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 882a/ANTH 582a, The Black Box of Implementation: Households, Communities, Gender The implementation of development projects has been described as existing in a “black box”: development and conservation policy (even participatory policy) is often not defined to inform effective implementation (Mosse 2004), and data on actual implementation is rarely incorporated into policy. This course examines the invisibility of implementation, and the common, mistaken assumptions about implementation targets (like households, communities, and gender) that take the place of absent data in policy. The course also makes an effort to use anthropology to shed light into this black box, to allow students to think more critically about the varied and dynamic social field in which project implementation occurs. Political and economic aspects of relations within households and communities, particularly gender relations, are examined in all of their complexity, variation, and dynamism. The real focus of the course, however, is not the contents of the black box, but the political and economic relations between households, communities, and gender, on the one hand, and the world of development and conservation, on the other. How do households and communities respond to the differential opportunities and restrictions that development and conservation introduce? What are the implications of the fact that those responses are often invisible to policy makers? Three hours lecture/seminar. Carol Carpenter

F&ES 894a, Green Building: Process, Products, Perspective, and Policy 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.
restrictions, planned communities and “private government,” landlord-tenant relations, issues of differential wealth and civil rights, and public land use regulation. Students will develop research topics with the assistance of the professor. Self-scheduled examination and paper required. Enrollment limited to fifteen. C. Priest

LAW 20202, Property, Social Justice, and the Environment Private property is sometimes cast as the villain in social and environmental problems, but sometimes it is cast as the solution to the same problems. This seminar will explore the relationship of property to social and environmental concerns in the context of several past and present controversies over property rights. The work will begin with some basic theories about the “commons” problem and the ways that property rights do or do not address that problem. Time permitting, other topics will include: land rights for squatters in less developed countries (primarily Latin America, Africa); land reform and development projects (primarily less developed countries); wildlife and fisheries management (global); water management (United States, Asia, Latin America); tradable pollution rights (United States); carbon trading schemes, particularly for tropical forest maintenance (global, tropical areas); free-market environmentalism and private land use restrictions (conservationist or exclusionary?) (United States and global); and indigenous land claims and claims to intellectual property (global). While the class will search for common themes about the range, capacities, and limitations of property regimes, theoretical purity should not be expected in this overview; moreover, topics may change in response to particular student interest. The class will meet twice weekly during the first seven to eight weeks of the term. Paper required; may be reflective (2 units) or research (3 units). Enrollment limited to fifteen. C. M. Rose

LAW 20207, Property The course will explore the law regulating the rights of private property broadly conceived. The principal focus will be on entitlements in land, but we will also think about the legal entitlements to other scarce resources. Topics will include limitations on the rights of landowners to exclude others; estates in land; co-ownership; landlord-tenant law and the slum housing problem; nuisance law; easements and covenants as means of cooperation among neighbors; and eminent domain, zoning, and other tools of public land use regulation. Scheduled examination. I. Ayres

LAW 20348/F&ES 824a, Environmental Law and Policy Introduction to the legal requirements and policy underpinnings of the basic U.S. environmental laws, including the Clean Water Act, Clean Air Act, and various statutes governing waste, food safety, and toxic substances. This course will examine and evaluate current approaches to pollution control and resource management as well as the “next generation” of regulatory strategies, including economic incentives and other market mechanisms, voluntary emissions reductions, and information disclosure requirements. Mechanisms for addressing environmental issues at the local, regional, and global levels will also be considered. Self-scheduled examination (Web) or paper option. E. D. Elliott

LAW 21117, Land Use Land use law shapes the success of cities, the sprawl of suburbs, and the fate of rural land. This course examines 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. Scheduled examination. R. C. Ellickson

LAW 21409, Property This course will inquire into a pervasive set of human institutions—the arrangements for getting, controlling, using, transferring, and forfeiting resources in the world around us. The course will begin by exploring what property regimes are and the range of purposes they might serve, and then move through the topics of acquisition, transfer, shared interests, and limitations on property. While the main focus will be property in land, the class will discuss the implications of property in other resources, such as wild animals, body parts, water, and information. The course will also examine recording and other notice-giving devices, interests in land over time, easements and deed restrictions, planned communities and “private government,” landlord-tenant relations, issues of differential wealth and civil rights, and public land use regulation. With the permission of the instructor, students who write a longer paper may earn an additional unit. Self-scheduled examination. C. Priest

LAW 21749, [The] Suburbs: Seminar Two-thirds of the residents of large U.S. metropolitan areas live in an oft-ridiculed location—a suburb. Contrary to the stereotypes of the 1950s, many of these communities are racially diverse. In 2010, 44 percent of suburban residents lived in places that were between 20 and 60 percent nonwhite. The early sessions of the seminar will be devoted to discussion of assigned readings on the history, politics, and economics of suburbs (including the Tiebout Hypothesis of specialization), and on legal issues associated with suburban settings, such as exclusionary zoning, and school and housing segregation. The later sessions will be devoted to student presentations of ongoing research. The default paper topic is analysis of the housing and land use policies of a particular suburb located in either greater New Haven or Westchester County, New York. (Most suburbs now have Web sites, which greatly facilitate research.) Although the coordination of paper topics promises to generate synergies in learning, a student is free to write on another pertinent topic. Paper required. A third-year student will not be eligible to seek Supervised Analytic Writing credit. Enrollment limited to twelve. R. C. Ellickson

MGT 548a, Real Estate Finance Matthew Spiegel

MGT 895a, International Real Estate Kevin Gray