

Study Areas and Course Descriptions, 2017–2018

In course titles, *a* designates fall term, *b* designates spring term, and *c* designates summer. [Bracketed courses are not offered in 2017–2018.] The School reserves the right to change the prescribed course of study as necessary.

DESIGN AND VISUALIZATION

Sunil Bald and Mark Foster Gage, Study Area Coordinators

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

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

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

Required Courses

1001c, Visualization I: Observation and Representation 0 credits. (Required of incoming M.Arch. I students with little or no academic background in architecture.) This summer course is an intensive, five-week immersion into the language of architectural representation and visualization, offering a shared inventory and basic framework upon which to build subsequent studies. Students are introduced to techniques and conventions for describing the space and substance of buildings and urban environments, including orthographic drawing, axonometric projection, perspective, architectural diagramming, vignette sketching, and physical modeling. Students work in freehand, hard-line, and digital formats. In parallel to the visualization portion of this course, an introduction to architectural history and theory focuses on principal turning points of thought and practice through to the eighteenth century. For 2017 the course will be taught from July 17 until August 18. Trattie Davies, coordinator; Miroslava Brooks, Kyle Dugdala

1011a, Architectural Design: First M.Arch. I Core Studio 6 credits. (Required of first-year M.Arch. I students.) This studio is the first of four core design studios where

beginning students bring to the School a wide range of experience and background. Exercises introduce the complexity of architectural design by engaging problems that are limited in scale but not in the issues they provoke. Experiential, social, and material concerns are introduced together with formal and conceptual issues. Joyce Hsiang, coordinator; Amina Blacksher, Brennan Buck, David Moon, Eeva-Liisa Pelkonen, Michael Szivos

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

1013c, Building Project 3 credits. (Required of first-year M.Arch. I students, early summer.) This course examines the materialization of a building, whereby students are required to physically participate in the construction of a structure that they have designed. By engaging in the act of making, students are exposed to the material, procedural, and technical demands that shape architecture. Construction documents are generated and subsequently put to the test in the field. Students engage in collaboration with each other, and with a client, as they reconcile budgetary, scheduling, and labor constraints, and negotiate myriad regulatory, political, and community agencies. The course seeks to demonstrate the multiplicity of forces that come to influence the execution of an architectural intention, all the while fostering an architecture of social responsibility, providing structures for an underserved and marginalized segment of the community. For 2018 students enrolled in this course will be required to work on the project from April 30 through June 29. For more information, see the section on the Building Project online at <http://architecture.yale.edu>. Prerequisites: 1011a, 1012b. Adam Hopfner, director; Kyle Bradley, and faculty

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

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

1017c, Visualization IV: Processing and Presentation 3 credits. (Required of first-year M.Arch. I students, early summer. No waivers allowed.) This seven-week, intensive course introduces Building Information Modeling (BIM) alongside manual drawing to expand each student’s analytical and expressive repertoire. Fundamental techniques are introduced through short exercises and workshops leading toward a sustained study of an exemplary precedent building. Quantitative analysis is pursued through both assembly modeling and visual dissection of both the programmatic spaces and functional elements. Observational and imaginative manual drawings allow for a reconstruction of the design process and reestablish the thought patterns that formed the building’s design priorities. These discoveries then are re-presented through interactive, multimedia presentations to describe the building assembly and its design ambitions. For 2018 the course will be taught from May 14 until June 29. Prerequisites: 1015a, 1016b. Amina Blacksher, John Blood

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

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

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

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

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

Advanced Design Studios (Fall)

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

1101a, Advanced Design Studio 9 credits. Frank O. Gehry, Davenport Visiting Professor

1102a, Advanced Design Studio 9 credits. Elia Zenghelis, Saarinen Visiting Professor

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

1104a, Advanced Design Studio 9 credits. Gonca Paşolar and Emre Arolat, Foster Visiting Professors

1105a, Advanced Design Studio 9 credits. Scott Ruff, Kahn Visiting Assistant Professor

1106a, Advanced Design Studio 9 credits. Alan Plattus; and Janet Marie Smith, Bass Distinguished Visiting Architecture Fellow

1107a, Advanced Design Studio 9 credits. Peggy Deamer

Advanced Design Studios (Spring)

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

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

1112b, Advanced Design Studio 9 credits. Alan Ricks, Davenport Visiting Professor

1113b, Advanced Design Studio 9 credits. Julie Eizenberg, Bishop Visiting Professor

1114b, Advanced Design Studio 9 credits. Roisin Heneghan, Kahn Visiting Professor

1115b, Advanced Design Studio 9 credits. Hildigunner Sverrisdóttir, Saarinen Visiting Professor

1116b, Advanced Design Studio 9 credits. Tatiana Bilbao, Foster Visiting Professor

1117b, Advanced Design Studio 9 credits. Elizabeth Moule, Stern Visiting Professor

1118b, Advanced Design Studio 9 credits. Florencia Pita and Jackilin Hah Bloom, Kahn Visiting Assistant Professors

1119b, Advanced Design Studio 9 credits. Steven Harris

1199b, Thesis 9 credits. Proposals for the Thesis option must be submitted for review and approval by the Design and Rules Committees by the Friday of Jury Week for the preceding spring term. Proposals must include an abstract, a proposal, a bibliography, a proposed schedule and adviser, a methodology statement, and the student's current portfolio. Students with approved proposals can take an Independent Study with an instructor of choice in the fall term as thesis preparation. Keller Easterling, coordinator

Elective Courses

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

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

of discourse that architects have chosen to express their intellectual project. This seminar is part lecture, part workshop where the experience of making a series of books helps to inform the development of ideas about the projective capacity of the book. Through case studies, this seminar examines the relationship book production has with a selection of contemporary and historical practices, including each project's physical and conceptual composition as well as how each project acts as an agent of the architect within a larger world of communication. The second part of the seminar asks students to apply ideas in a series of three book projects that emphasize the book as an instrument of architectural thinking. Most projects are individual efforts, but work in pairs or groups is also explored. Limited enrollment. Luke Bulman

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

1222b, Diagrammatic Analysis 3 credits. Using formal analysis as a method to understand architectural form, this seminar provides students with an understanding of the complexities of current architectural production and helps them to become fluent in the language of form. Students are required to produce weekly drawings and to participate in reading discussions on specific buildings, ranging from Renaissance to contemporary. 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 of a full-scale prototype chair. Limited enrollment. Timothy Newton

[1226b, Site + Building 3 credits. This seminar investigates buildings and their sites. Conceived as a vehicle for understanding the relationship between site and building through critical analysis, the course examines ancient, historic, and contemporary works of architecture and landscape architecture. Material includes works by Hadrian, Diocletian, Michelangelo, Raphael, Palladio, Durand, Schinkel, Lutyens, Asplund, Aalto, Wright, Mies, Kahn, Neutra, Saarinen, Scarpa, Bawa, Krier, Eisenman, Ando, and Gehry. The seminar focuses on site organization strategies and philosophies of site manipulation in terms of topography; urban, suburban, and rural context; ecology; typology; spectacle; and other form-giving imperatives. Methods of site plan representation are also scrutinized. Requirements include three significant readings, one major class presentation, and the keeping of individual class notebooks. Limited enrollment. Not offered in 2017–2018. Steven Harris]

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

[**1228b, Disheveled Geometries: Ruins and Ruination** 3 credits. Architectural ruins index the total failure of individual buildings, technologies, economies, or, at times, entire civilizations. This course researches the topics of ruination and architectural ruins—what produces them, what defines them, and how they impact individuals, cities, and civilizations on levels from the visual and formal to the philosophical and psychological. The formal and visual materials of this course emerge from the study of ruins from not only the past and present, but also the future, through research into the speculative territories of online “ruin porn,” new genres of art practice, and in particular dystopian television and film projects that reveal an intense contemporary cultural interest in apocalyptic themes. While significant nineteenth-century theories of architectural ruination, including those of John Ruskin (anti-restoration) and Eugène Emmanuel Viollet-le-Duc (pro-restoration), are addressed, the primary intellectual position of the course emerges from readings and discussions of the philosophical methodology of “ruination.” Student projects involve the philosophical and aesthetic ruination of iconic architectural projects to determine not only their essential qualities, but hidden, latent ones as well. Subsequent group discussion of this work vacillates between philosophical and aesthetic poles in an attempt to tease out new observations on these projects as well as on the nature of ruins and ruination. The self-designed final project is determined pending consultation between the students and instructor, but involves photorealistic failure of past, present, or future architectural or urban projects; dystopic visual speculations; fabrication experiments that test actual material decay and failure; or attempts to reproduce the aesthetic ambitions of ruin porn through the manipulation of existing, or the design of new, projects. The goal of the course is not to convey an existing body of architectural knowledge, but to unearth a new architectural discourse that considers architecture in reverse—emphasizing its decay rather than its creation in an effort to reveal new territories of architectural agency. Limited enrollment. Not offered in 2017–2018. Mark Foster Gage]

[**1230b, Patternism: Computation and Architectural Drawing** 3 credits. This seminar employs computational software to reexamine architectural drawing as traditionally understood: line-based representation that establishes spatial depth and tactility. The course begins by examining architectural drawing over the past forty years, particularly in relation to digital abstraction that stressed pattern rather than representation: coherent systems without physicality or character. Referencing the discourse of modern painting and sculpture, students are asked to formulate a thesis that responds to historical shifts they find between abstraction and physicality; between the flat graphic and the illusion of depth; and between distinct drawing types, such as perspectival and orthographic. After establishing a conceptual foundation, the seminar focuses on exploiting the full potential of algorithmic software and the production of large architectural drawings. Limited enrollment. Not offered in 2017–2018. Brennan Buck]

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

1239a, Theory through Objects: Activist Form 3 credits. This seminar seeks to address the increasing expectation that architecture more directly address the social and political problems of today: income inequality, racial division, religious persecution, gender identity and rights, and ecological crisis, to name a few. Students speculate on ways in which the design of buildings and objects can be more socially and politically impactful and if there are other ways to discuss these issues rather than relying on standard critical-theory tropes that have governed architecture’s social ambitions for decades. Instead of relying on dry PowerPoint presentations or abstract, intangible discussions, in this seminar all presentations, brainstorming, ideation, and think-tank-style discussions are done exclusively by engaging with physical objects. Students conduct preliminary research on historic examples of the politicization of objects, largely using the Victoria and Albert Museum’s recent *Disobedient Objects* exhibition as a collective starting point, to position subsequent discussions related to selected writings by Jacques Rancière, Graham Harman, Elaine Scarry, Steven Shaviro, the Laboria Cuboniks Xenofeminist Collective, and others. Concepts and movements addressed include, but are not limited to, Dissensus/Aisthesis, Xenofeminism, Object-Oriented Ontology, Accelerationism, and Afrofuturism. All assignments involve the production of physical objects with the exception of students who opt to fulfill the History and Theory elective requirement through the writing of a fifteen-page paper instead of the production of a final object. Enrollment limited to ten. Mark Foster Gage

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

1241a, Rendered: Architecture and Contemporary Image Culture 3 credits. This course addresses the role of image making in architecture at a time when consumers of culture, including architects, are inundated by images. While images can never replace the

experience of a building in time and space, it is their potential to circulate so seamlessly that gives them undeniable power as our discipline's primary means of engagement with popular culture. The course examines the impact of the Internet on contemporary art and recent writing on aesthetic concepts, including post-digital, post-medium, and the new aesthetic. This discourse suggests that contemporary image culture has profound effects on how we understand authorship, materiality, and representation generally. Students are asked to speculate on the current and future role of the image as an architectural medium in this context. The final project is a series of architectural images situated in an online context. Limited enrollment. Students who have taken 1215a, Inner Worlds, are not eligible for this course. Brennan Buck

1242b, Architecture and Illusion 3 credits. This seminar examines the synthesis of architectural and representational space achieved during the Baroque period. In addition to the vanishing point and view point previously defined by perspective drawing, painter-architects, such as Andrea Pozzo, introduced a third point into their constructions, a station point occupied by the viewer, which for the first time synthesized building and drawing. Despite its popularity, architectural trompe l'oeil has been discounted since Pozzo's own time as a visual trick that collapses when viewed from multiple points. Though, technologically, its effects pale in comparison to the illusive power of contemporary media, this seminar posits that trompe l'oeil has renewed relevance today amid revived interest in representation and its potential to create multiplicitous and ambiguous legibility. After establishing a conceptual foundation addressing both Western and non-Western modes of drawing, students develop a trompe l'oeil case study, speculating on the multiple implied volumes their precedent suggests and testing the threshold between representational and physical space. Limited enrollment. Students who have taken 1230b, Patternism, are not eligible for this course. Brennan Buck

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

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

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

ART 110a, Sculpture Basics The concepts of space, form, weight, mass, and design in sculpture are explored and applied through basic techniques of construction and material. Various techniques of gluing and fastening, mass/weight distribution, hanging/mounting, surface/finishing, and types of materials are addressed. In addition to the hands-on application of sculptural techniques, class time is spent looking at various concepts and approaches to the understanding and development of sculptural ideas, from sculpture as a unified object to sculpture as a 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 120b, 121b, 122b, or 125a. Enrollment limited to twelve. Lab/materials fee: \$150. Sandra Burns

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

ART 114a or b, Basic Drawing An introduction to drawing, emphasizing articulation of space and pictorial syntax. Class work is based on observational study. Assigned projects address fundamental technical and conceptual problems suggested by historical and recent artistic practice. No prior drawing experience necessary. Open to all undergraduates; *required of all art majors*. Lab/materials fee: \$25. Anna Betbeze, Kati Gegenheimer, Mark Gibson, Sophie Naess, Robert Storr, Anahita Vossoughi, Molly Zuckerman-Hartung, and faculty

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

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

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

ART 122b, Introduction to Sculpture: Video An intensive investigation of time-based works through such mediums as performance, video, installation, and sound. Emphasis placed on the integration and manipulation of mediums and materials to broaden the historical context. Critiques, readings, video screenings, and artist lectures consider how the history of time-based works informs a contemporary practice. Frequent workshops complement the studio work. The shops and studios are available during class time and during days and evenings throughout the week. Enrollment limited. Lab/materials fee: \$150. Sandra Burns

ART 130a or b, Painting Basics A broad formal introduction to basic painting issues, including the study of composition, value, color, and pictorial space. Emphasis on observational study. Course work introduces students to technical and historical issues central to the language of painting. No prerequisites; recommended for non-majors and art majors. Lab/materials fee: \$75. Mark Gibson, Sophy Naess, Robert Storr, Molly Zuckerman-Hartung

ART 132a or b, Introductory Graphic Design A studio introduction to visual communication with an emphasis on 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. Lab/materials fee: \$150. Julian Bittiner, Yeju Choi, Henk van Assen

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

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

ART 346a, Dematerial/Material Exploration of questions and topics pertinent to contemporary sculpture through making, writing, reading, looking, critique, discussions, and field trips. Projects become increasingly self-directed as students develop relationships to materials, techniques, and ideas both familiar and new. Enrollment limited to twelve. Lab/materials fee: \$75. Prerequisite: ART 120b, 121b, 122b, or equivalent, or permission of the instructor. Brent Howard and faculty

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

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

ART 370a, Communicating with Time, Motion, and Sound This studio class explores how the graphic designer's conventions of print typography and the dynamics of word-image relationship change with the introduction of time, motion, and sound. Projects focus on the controlled interaction of words and images to express an idea or tell a story. The goal is to experience firsthand the extra dimensions of time-based communications, and to choreograph aural and visual images through selection, editing, and juxtaposition. Lab/materials fee: \$150. Prerequisite: ART 265b or 368a, or permission of the instructor. Christopher Pullman

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

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

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

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

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

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

TECHNOLOGY AND PRACTICE

Martin Finio and Kyoung Sun Moon, Study Area Coordinators

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

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

Required Courses

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

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

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

2021a, Environmental Design 3 credits. (Required of second-year M.Arch. I students.) This course examines the fundamental scientific principles governing the thermal, luminous, and acoustic environments of buildings, and introduces students to the methods

and technologies for creating and controlling the interior environment. Beginning with an overview of the Laws of Thermodynamics and the principles of Heat Transfer, the course investigates the application of these principles in the determination of building behavior, and explores the design variables, including climate, for mitigating that behavior. The basic characteristics of HVAC systems are discussed, as are alternative systems such as natural ventilation. The second half of the term draws on the basic laws of physics for optics and sound and examines the application of these laws in creating the visual and auditory environments of a building. Material properties are explored in detail, and students are exposed to the various technologies for producing and controlling light, from daylighting to fiber optics. The overarching premise of the course is that the understanding and application of the physical principles by the architect must respond to and address the larger issues surrounding energy and the environment at multiple scales and in domains beyond a single building. The course is presented in a lecture format. Homework, computational labs, design projects, short quizzes, and a final exam are required. Philip Steiner

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

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

Elective Courses

2211a, Technology and Design of 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 technologies for tall buildings are studied, particular emphasis is placed on more recent trends such as diagrid structures and double-skin facades. Further, this seminar investigates emerging technologies for tall buildings and explores their architectural potentials. Finally, this course culminates in a tall building design project and presentation. Limited enrollment. Kyoung Sun Moon

[2212b, The Liquid Threshold between Order and Chaos 3 credits. This seminar explores the design of complex three-dimensional structural systems. Through discussions on existing projects, including some of the instructors' own, and also modeling and testing new systems to destruction, both physically and digitally (using tools such as Karamba 3D), the seminar intends to foster a deeper intuitive understanding of structures. At what point do you know a structure is at its limit? Limited enrollment. Not offered in 2017–2018. Neil Thomas, Aran Chadwick]

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

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

assignments ultimately comprising a unified, term-long project. Limited enrollment. Not offered in 2017–2018. Michael Szivos]

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

2233b, Strange Forms in Strange Relationships 3 credits. Through physical experimentation, this seminar investigates contemporary strategies and techniques for developing innovative new languages that capitalize on the extremes between simplicity and complexity of architectural form. Interference between the familiar and the foreign is explored by misusing geometric, textural, chromatic, and figural conventions in order to reveal and enhance architectural form through the strangeness of forms, materials, and organizations. The course combines lectures, discussions, and demonstrations of key modeling techniques and strategies necessary for exploring the topic. The readings and lectures provide the key theoretical and cultural arguments around experimental work of the past two decades. To understand the current moment, lineages of work are established charting strangeness within architecture's long history as well as its recent past. Software knowledge is not a prerequisite, as the tools and programs are taught extensively throughout the course, along with the conceptual and historic content. Students explore particularly innovative modeling techniques in Rhino, Maya, NCloth, and ZBrush, which facilitate a number of strategies for the explorations of the course. Software and fabrication are used as generative tools to explore concepts rather than merely output representation. The final deliverable is a small-scale fabrication project that exhibits the new architectural qualities discovered in the course. Limited enrollment. Nathan Hume

2234b, Material Case Studies 3 credits. This seminar focuses on the intuition for material use in both the execution and generation of design. Students are exposed to a broad overview of the role of materials in the formation and execution of a spatial concept, as well as provided a venue for intensive work with specific materials. Structured along lines of research, experimentation, and design, the course is an intensive investigation into the relationship between a material's substance and its performance metrics and qualities. In addition to looking at materials typically used in the production of built space, the course explores whether the investigation of materials not traditionally used in architecture can further the profession. Research and discussions, in parallel, look at how material decisions affect the environment and human health. Physical material samples are used

throughout the term. A site-specific, design-build spatial proposal serves as the course's final project. Limited enrollment. Emily Abruzzo

2235a, Speculative Form: Methods of Discrete Computational Design 3 credits. This course investigates nonlinear computational generative systems and their application in the manufacturing of architectural design research. Functioning as an open source research group of computational design, by concentrating primarily on Python for Rhinoceros3D, a new set of possibilities for the development of cutting-edge digital techniques is explored. The seminar tests this software in an intensive format and seeks to produce innovative intersections between explicit modeling/figuration and algorithmic formation. No previous programming experience is necessary; both introductory and advanced level students are accommodated with a series of introductory sessions, online tutorials, workshops, and lectures followed by suggested readings that gradually focus on individual projects. Students also work in pairs to design, code, and fabricate a full-scale constructed assembly. Limited enrollment. Ezio Blasetti

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.

ANTH 615a, Anthropological Perspectives on Science and Technology The course focuses on ethnographic work on scientific and technical topics, ranging from laboratory studies to everyday technologies. Selected texts include canonical books as well as newer work from early scholars and the most recent work of established scholars. Divided into four units, this seminar explores the theme of "boundaries," a perennial topic in anthropology of science that deals with the possibility and limits of demarcation. Each week, different kinds of boundaries are examined, and students learn to see their social constructedness as well as the power they carry. We begin by exploring where science is and isn't, followed by the boundary between ourselves and technology, which is a specific example of the third boundary we examine: the one artificially drawn between nature and culture. We end with readings on geopolitics and the technologies of delineating nation from nation as well as thinking about postnational scientific states. Class discussion guides each session. One or two students each week are responsible for precirculating a book review on the week's reading, and a third student begins class by reacting to both the texts and the review. The final assignment is a research paper or a review essay. Lisa Messeri

CHEM 505a, Alternative Energy Design principles for molecular components of alternative energy devices. Climate change and our alternative energy future. Light energy conversion, energy transfer, and charge separation in photosynthesis. Dioxygen evolution in photosystem II. Biofuels: bioethanol, biodiesel, hydrogenase. Interaction of light

with semiconductors. Fast spectroscopy to probe interfacial electron transfer. Computational design and characterization. Solar cells for electricity, photo-catalysis, biomimetic water oxidation. Hydrogen economy. Team-taught. Gary Brudvig

CPSC 100a, Introduction to Computing and Programming Introduction to the intellectual enterprises of computer science and to the art of programming. Students learn how to think algorithmically and solve problems efficiently. Topics include abstraction, algorithms, data structures, encapsulation, resource management, security, software engineering, and Web development. Languages include C, Python, SQL, and JavaScript, plus CSS and HTML. Problem sets inspired by real-world domains of biology, cryptography, finance, forensics, and gaming. See <https://cs50.yale.edu> for additional information. No previous programming experience required. Open to students of all levels and majors. Benedict Brown, Natalie Melo

CPSC 112b, Introduction to Programming Development on the computer of programming skills, problem-solving methods, and selected applications. No previous experience with computers necessary.

CPSC 527a, Object-Oriented Programming Object-oriented programming as a means to efficient, reliable, modular, reusable code. Use of classes, derivation, templates, name-hiding, exceptions, polymorphic functions, and other features of C++.

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

CPSC 679a, Computational Issues in 3-D Design and Fabrication This course focuses on computational methods for designing and fabricating 3-D objects. The course considers the data structures and algorithms for the complete process, from specifying physical source material to the production of a new physical object. The process begins with obtaining the shapes of existing 3-D objects in digital form using active 3-D scanning or photogrammetry. The digital shape is then edited with a variety of local operators and global filters. The shape description is then prepared for input to a numerically controlled machine. Production by various means is considered, including fused deposition modeling (FDM), milling, and laser cutting.

HIST 939b/HSHM 750b, Approaches to the History of Technology An introduction to the history of technology, with a focus on classic and recent works in the field. Students discuss theoretical problems and case studies from the Middle Ages to the present. Topics include technological determinism, technology transfer, the Industrial Revolution, the social construction of technology, thing theory, the human-machine relationship. Paola Bertucci

MGT 653a, 12 Design Ideas That Changed the World This introductory survey course sets the stage for understanding design as a catalyst in business by presenting twelve seminal design problems, across a variety of fields and industries, each highlighting the central motives – and methods – that yield successful outcomes. Each week we invite one

client or designer (or client/designer team) to present a project in depth. (In some cases, we may welcome a corporate leader in conversation with a leading scholar here at Yale.) Students work independently and in teams to research and respond, the following week, with analysis, critique, and alternate solutions. From public health to public space, retail strategy to political positioning, education to journalism to biotechnology, we want to explore how design works within complex organizations to help shape decisions, ideas, products, and more. Michael Bierut, Jessica Helfand

MGT 654b, The Invention of Desire Design is now recognized as a decisive advantage in countless industries and a boon to innovation in all fields. But what is design, really? Is it a process or a practice? A product or a platform? And if, arguably, it defies such easy classification, then who wants and needs it, produces and consumes it? This class concentrates on addressing the human characteristics that both influence and are impacted by design and that frame, among other things, our perceptions of loyalty, credibility, even leadership. Can design convey false authority? Do the things we make result in unintended consequences? How can we reconcile need against greed, personal voice against public choice? Combining research, collaboration, and weekly visits to the Yale University Art Gallery, students address issues of cultural, historical, and contemporary consequence to gain a deeper understanding of design's intrinsic value – and its enduring power – as a humanist discipline. Jessica Helfand

MGT 828b, Creativity and Innovation In this course we study the creative process and the management of this process. Our objective is to help you learn about and come to appreciate basic features of the creative process, including creative development and a number of different psychological and cultural approaches to creativity, as well as issues involved in managing creativity effectively, including leadership, managing creative people, teams and projects, creativity initiatives, and organizational response to change. How do creative ideas happen? How can we foster our creativity and the creativity of those around us? What are the paths of creative development of individuals who are successful in their creative endeavors? What are the obstacles to creativity? What is the nature of creativity in teams and organizations? These are some of the questions we address. We study creativity in many domains, including business, science and technology, the arts, and life in general, relying on a mixture of lectures, readings, and discussion. We engage in a variety of exercises, including exercises in which you explore your own creativity and group exercises in which you engage in creative activity with others. We also learn through cases, about creativity in business and how organizations foster creativity and manage creative processes. Jonathan S. Feinstein

PSYC 637b, Minds, Brains, and Machines Exploration of the implications that the brain is a kind of computer that gives rise to the mind. Readings combine classical and cutting-edge research in psychology, philosophy, and artificial intelligence. Julian Jara-Ettinger

SOCY 632b, Social Network Analysis Social Network Analysis (SNA) refers to both a theoretical perspective and a set of methodological techniques. As a theoretical perspective, SNA stresses the interdependence among social actors. This approach views the social world as patterns or regularities in relationships among interacting units and focuses on how such Sociology patterns affect the behavior of network units or actors. A

“structure” emerges as a persistent pattern of interaction that can influence a multitude of behaviors, such as getting a job, income attainment, political decision-making, social revolutions, organizational merges, global finance and trade markets, delinquent youth behaviors, the spread of infectious diseases, and so on. As a methodological approach, SNA refers to a catalog of techniques steeped in mathematical graph theory and now extending to statistical simulation and algebraic models. This course surveys the growing field of SNA, emphasizing the merger of theory and method, while gaining hands-on experience with network data and software. Emily Erikson

HISTORY AND THEORY

Keller Easterling and Eeva-Liisa Pelkonen, Study Area Coordinators

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

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

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

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

Required Courses

3011a, Modern Architecture 3 credits. (Required of first-year M.Arch. I students; available as an elective for M.Arch. II and M.E.D. students.) The course embraces the last century and a half’s history of architecture, when traditional fables began to yield to

more scientifically conceived ideas of architecture’s role in the creation of civilizations. As architecture gained importance in advancing social and industrial agendas, it also built a basis for theoretical reflection and visionary aesthetics. The expanding print and media culture accelerated the migration of ideas and propelled architecture beyond its traditional confines. Discussion of major centers of urban culture and their characteristic buildings alternates with attention to individual concepts and their impact in an increasingly interconnected culture of design. Kurt W. Forster

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

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

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

3091a, Methods and Research Workshop 3 credits. (Required of first-year M.E.D. students; available as an elective for M.Arch. I and M.Arch. II students with permission of instructor.) This course introduces students to methods of architectural writing and research, laying the groundwork for an advanced research project. By investigating various text genres, such as surveys, journalism, manifestos, scholarly essays, critical essays, and narratives, this course studies ways of writing about architecture, urbanism, and the environment. Recent debates concerning the relationship between architectural history and theory and the questions about disciplinary and interdisciplinary boundaries are explored. Working toward a substantial research paper requirement, students are introduced to hands-on research through a series of library and archival workshops. Limited enrollment. Eeva-Liisa Pelkonen

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

written thesis. The thesis, which details and summarizes the independent research, is to be completed for approval by the M.E.D. committee by the end of the fourth term. M.E.D. faculty

Elective Courses

3216b, Case Studies in Architectural Criticism 3 credits. This seminar concentrates on issues that influence the way modern buildings and their architects are perceived by critics, scholars, and the public. The careers of such architects as Frank Lloyd Wright, Eero Saarinen, Louis Kahn, Philip Johnson, Robert Venturi, and Frank Gehry provide a framework for the examination of how patronage, fashion, social change, theory, finance, and politics affect the place of prominent designers and their work in the historical record. Readings include such critics as Lewis Mumford, Ada Louise Huxtable, Blair Kamin, Christopher Hawthorne, Michael Kimmelman, and Martin Filler. Responding to lectures by the instructor and visitors, students develop criteria for judging architectural quality (program, site, “message,” details), and then apply those criteria in three brief analytical papers that build toward a fifteen-page research paper investigating the elements that contributed to the “success,” “failure,” or “reevaluation” of an individual building, an architect’s career, or a body of architectural work. All written assignments are reviewed in individual conferences with the instructor. Limited enrollment. Carter Wiseman

[3217b, Writing on Architecture 3 credits. The goal of this course is to train students in the principles and techniques of nonfiction writing as it applies to architecture. The course includes readings from the work of prominent architects, critics, and literary figures, as well as reviews of books and exhibitions, opinion pieces, and formal presentations of buildings and projects. Class writing includes the development of an architectural firm’s mission statement, drafting proposals for design commissions, Web texts, and other forms of professional communication. The main focus of the course is an extended paper on a building selected from a variety of types and historical periods, such as skyscrapers, private houses, industrial plants, gated communities, malls, institutional buildings, and athletic facilities. Limited enrollment. Not offered in 2017–2018. Carter Wiseman]

3220b, Contemporary Architectural Discourse Colloquium 3 credits. Organized by second-year M.E.D. students in collaboration with the director of the M.E.D. program, this year’s colloquium, entitled “Of Other Natures,” explores alternative nature-culture relationships and seeks to provoke different perspectives toward architectural and environmental design. Concepts developed by Martin Heidegger (Dasein and *Techne*), Bruno Latour (the politics of nature and quasi-object), and Peter Sloterdijk (sphere and atmospheric design) are studied alongside texts from different cultural and historical contexts that include “qi” (objects) and “dao” in Taoism; John Ruskin’s idea of geology and ethics; and American transcendentalism. Through the contemplation of these theoretical frameworks, the course speculates on other alternative understandings of nature and the relationship between nature and built environment in order to further inspire design intentions and methodologies. Guest speakers are invited to participate in the discussions. Limited enrollment. Eeva-Liisa Pelkonen

3223a, Parallel Moderns: Toward a New Synthesis? 3 credits. This seminar puts forward the argument that what many have accepted as the mutually exclusive discourses of tradition and innovation in the modern architecture of the first half of the twentieth century—respectively identified as the “New Tradition” and the “New Pioneers” by Henry-Russell Hitchcock in his *Modern Architecture: Romanticism and Reintegration* (1929)—in fact share common genealogy and are integral to an understanding of modern architecture as a whole. The seminar explores in depth key architects working in the “New Tradition” and goes on to explore its impact for postmodernism in the 1970s and 1980s. The possible emergence of a new synthesis of seeming opposites in the present is also considered. Limited enrollment. Robert A.M. Stern

3228a, The Autobiographical House 3 credits. Architects and artists have long built dwellings for themselves (and for surrogate clients) as showcases of their art, as 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. Not offered in 2017–2018. Limited enrollment. Keller Easterling]

[3237b, Human/Nature: Architecture, Landscape, Technology 3 credits. Our global environmental crisis poses the challenge of devising a new model of ecologically responsible interdisciplinary practice that brings together two disciplines—architecture and landscape architecture—that have been professionally segregated at least since the nineteenth century. The first half of the term looks at this issue from a cultural and historical perspective, tracing the ideological origins of the architecture/landscape divide to

another Western polarity—the false opposition between nature and culture, human and non-human—dualisms that are deeply rooted in Western literature, philosophy, popular culture, and even notions of gender and sexuality. The seminar explores how this way of thinking has impacted design practices in America from Frederick Law Olmsted in the mid-nineteenth century to Ian McHarg and Robert Smithson in the 1960s and 1970s. During the second half of the term the focus shifts to consider contemporary trends, examining the work of a diverse group of architects, landscape architects, and artists who have been undertaking groundbreaking projects that dissolve traditional distinctions between building and environment. Three converging design directions that unite this otherwise heterogeneous group—topography, bio-computation, and ecology—are identified, and the affinities and differences between them are discussed. Limited enrollment. Not offered in 2017–2018. 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 that, in the aggregate, may have more ramifying consequences 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 suggestive of expanded forms of practice. Limited enrollment. Keller Easterling

3240a, Spatial Concepts of Japan: Their Origins and Development in Architecture and Urbanism 3 credits. The seminar explores the origins and developments of Japanese spatial concepts and surveys how they help form the contemporary architecture, ways of life, and cities of the country. Many Japanese spatial concepts, such as *MA*, are about creating time-space distances and relationship between objects, people, space, and experiences. These concepts go beyond the fabric of a built structure, and encompass architecture, landscape, and city. Each class is designed around one or two Japanese words that signify particular design concepts. Each week, a lecture on the word(s) with its design features, backgrounds, historical examples, and contemporary application is followed by student discussion. Contemporary works studied include those by Maki, Isozaki, Ando, Ito, SANAA, and Fujimoto. The urbanism and landscape of Tokyo and Kyoto are discussed. Students are required to make in-class presentations and write a final paper. Limited enrollment. Yoko Kawai

3242a, The Digital Turn: A Cultural History 3 credits This seminar assesses the present state of computational design by situating the digital turn in architecture within the long duration of the history of cultural technologies. It first describes the technical logics of hand-making, mechanical reproductions, and digital making, focusing on the early modern invention of architectural notations and of architectural authorship (the rise of the “Albertian paradigm” in the Renaissance), and on the modernist principle of

standardization in the twentieth century. It then outlines a brief history of computation in architecture and of its theoretical and technical premises, and discusses the present state of digital design theory (theories and tools of simulation, optimization, discretization, material computation, and bio-computing). Students test some of the interpretive patterns presented or discussed in class by developing a case study of their choice (of a media object, object, building, software, theory, or technology). A fifteen-page paper option is available that can satisfy the History and Theory elective requirement. Limited enrollment. Mario Carpo

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

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

3264b, XS: “micro” in Japanese Architecture and Urbanism 3 credits. This seminar focuses on recent trends in Japanese architecture and design culture over the past twenty years that developed since the bursting of the bubble economy and the architectural excess it enabled. The course looks at architectural, urban, and aesthetic concepts that embrace the diminutive. Topics include the contemporary Japanese house, micro-urbanism, return to nature movements, and concepts of both the cute and monstrous. These

are explored through a series of lenses that engage tradition, pragmatism, sustainability, gender, and nationalism. The seminar requires readings and class discussion as well as an independent research project that culminates in a presentation and a paper. Limited enrollment. Sunil Bald

[3265a, Architecture and Urbanism of Modern Japan: Destruction, Continuation, and Creation] 3 credits. This course examines how design philosophies and methodologies were developed in Japanese architecture during the 130-year period from the Meiji Restoration until the postmodern era. Special attention is paid to the process of urbanization through repeated destructions and the forming of cultural identity through mutual interactions with the West, both of which worked as major forces that shaped architectural developments. Highlighted architects include Chuta Ito, Goichi Takeda, Frank Lloyd Wright, Kameki Tsuchiura, Sutemi Horiguchi, Kunio Maekawa, Kenzō Tange, Arata Isozaki, Fumihiko Maki, Kisho Kurokawa, Kazuo Shinohara, Tadao Ando, and Mirei Shigemori. Historical photos and excerpts from films are used to better understand context. Students are required to make in-class presentations and write a final paper. Limited enrollment. Not offered in 2017–2018. Yoko Kawai]

[3268b, Reinterpreting the Enlightenment: Order and Chaos in the Long Eighteenth Century] 3 credits. This seminar studies the works of architects and artists from Nicolas Poussin and Claude Perrault to Jacques-Louis David and Claude-Nicolas Ledoux through the lenses of successive reinterpretations of the Enlightenment in the modern period. Conventional ascriptions of the “Age of Reason” (Ernst Cassirer, Emil Kaufmann) were thrown into question by post-World War II philosophers (Theodor Adorno, Max Horkheimer) and later by poststructuralist critics (Michel Foucault, Jacques Derrida); these critiques were countered by a new interest in typological form (Aldo Rossi, Bruno Fortier) that founded Neo-Rationalism on a reading of Enlightenment visions of city structure. The engaged historical interest in the reinterpretation of the French Revolution and its cultural effects (Maurice Agulhon, Mona Ozouf, Robert Darnton) together with a revived utopianism of the later 1960s opened the texts of Enlightenment architects, hitherto seen as “difficult,” to scrutiny with respect to the literary accomplishments of the late eighteenth century. More recently, the return to a study of the idea of “nature” in the work of Bruno Latour and Félix Guattari has stimulated a sense of the “modernity” of the Enlightenment’s views of the environment, for better or for worse. A fifteen-page paper that may be illustrated by graphic analyses is required. Limited enrollment. Not offered in 2017–2018. Anthony Vidler]

3271a, Babel 3 credits. Few buildings can claim a longer history of interdisciplinary influence than the Tower of Babel. This seminar studies the various arenas of Babel’s appropriation — archaeological, art historical, theoretical, philosophical, theological, ideological, military, linguistic, and literary — with an eye to understanding the multivalence of architectural ideas as they circulate within culture. The course pays particular attention to Babel’s dramatic reassertion under the conditions of modernity, as a marker both of aspiration and of doubt; and it aims to speculate on the Tower’s potential future. Weekly readings and assignments provide a foundation for in-class presentations and final research projects, either on an aspect of the appropriation of Babel itself, or on the

trajectory of a comparable architectural figure. Topics that engage with the construction of contemporary architectural ideas are especially welcome. Limited enrollment. Kyle Dugdale

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

[3273b, The Architectural Surface: Figure, Form, Ambiance] 3 credits. This seminar examines and debates the theoretical controversies surrounding the material and conceptual properties of the architectural surface. The course is conceived as a series of case studies of buildings and projects, supported by readings in philosophy, psychoanalysis, and historiography, discussing the role of the surface historically and today. Themes include smooth and rough (Alberti, Giulio Romano); solid geometries (Ledoux, Boullée); historicist tableaux (Piranesi, Soane); frames and skins (Labrouste, Paxton); smooth and rough (Le Corbusier); containers and wrappings (Koolhaas, SANAA); topologies (Lynn, Schumacher). Following the presentations, students develop and present their own case studies. Doctoral and M.E.D. students in the seminar develop a research paper in the history, theory, and criticism of the surface with special attention to historiographical context. A fifteen-page paper, with appropriate graphic analyses, is required. Limited enrollment. Not offered in 2017–2018. Anthony Vidler]

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

Each student identifies a subject of particular interest to be developed into a research project; topics that engage with contemporary debates are especially welcome. Limited enrollment. Not offered in 2017–2018. Kyle Dugdale]

[3279b, Utopics: Utopias, Dystopias, Technotopias, and Heterotopias in Architecture and Urbanism, 1945–2001 3 credits. This seminar investigates the rise and fall of utopian thought in architecture after the Second World War. Following an introduction to the traditional narratives of utopia in Plato, More, Bacon, and Ledoux, the seminar addresses the emergence of utopianism as a critical practice in the 1950s. Lettrism, Situationism, Archizoom, Superstudio, Archigram, *Utopie*, Metabolism, and many other experiments were supported by political, psychoanalytical, and cybernetic theories of modern social organization. Students select one example to research through the term. An in-class presentation and a fifteen-page paper, with appropriate graphic analyses, are required. Limited enrollment. Not offered in 2017–2018. Anthony Vidler]

3280a Medium Design 3 credits. While usually focused on designing buildings, designers might also design the medium in which those buildings are suspended. Considering ground instead of figure, or field instead of object, medium design inverts some dominant cultural logics about problem-solving and offers additional aesthetic pleasures and political capacities. Medium is assessed for latent properties that unfold over time and territory, propensities within a context, potentials in relative position, or the agency in arrangement, and like an operating system or a growth medium, it decides what will live or die. In this matrix of activity where it is easier to detect discrepancy, latency, temperament, and indeterminacy, right answers are less important than unfolding or branching sequences of response. Benefiting from an artistic curiosity about reagents and spatial mixtures or spatial wiring, medium design suggests different organs of design or different ways to register the design imagination. Beyond buildings, master plans, declarations, laws, or standards, it deploys multipliers, switches, or time released organs of interplay like bargains, chain reactions, ratchets. While not dominant, this habit of mind is ever-present in many disciplines and leads to readings that include Michel Foucault, Giorgio Agamben, Gilbert Ryle, Gilles Deleuze, Bruno Latour, J.J. Gibson, Marshall McLuhan, Harold Innis, Jacques Rancière, Walter Benjamin, Gregory Bateson, Vilem Flusser, Dunne and Raby, and John Durham Peters. An in-class presentation and final paper complete the requirements of the course. Limited enrollment. Keller Easterling

3282b, Effect/Affect: Theories and Practices of Architectural Experience 1750–2020 3 credits. This seminar engages in a close reading of selected works in philosophy, psychology, and architectural theory, in tandem with selected architectural projects and theories, with the intent of exploring the complex relationships between architecture and the experiencing subject since the Enlightenment. Topics include theories of the spatial and historical sublime (Burke), psychoanalytical approaches to architecture (Freud, Lacan), poststructuralist influences (Foucault, Derrida, Barthes), and more recent questions of “affect” (Deleuze, Guattari). Students select one example to research through the term. An in-class presentation and a fifteen-page paper, with appropriate graphic analyses, are required. Limited enrollment. Anthony Vidler

3283b, After the Modern Movement 3 credits. This course aims to answer the questions: What was and what is postmodernism in architecture? Postmodernism should not be seen as a style, but rather as a condition that arose out of the ahistorical, acontextual, self-referential, materialistic modernism that prevailed in the post-WWII era. By pushing aside history, context, and social concerns, modernism of that period exhausted itself of its potential, and restive architects incorporated figuration and representation as they sought to make the discipline more responsive to the wide expanse of popular culture. However, postmodernism was not intended as a repudiation of modernism, but as an evolution and corrective action. Although the writings of Fredric Jameson, Andreas Huyssen, and Jean-François Lyotard provide the theoretical underpinnings for the seminar, the course is primarily concerned with architecture (as chronicled by Charles Jencks in his 1977 book, *The Language of Post-Modern Architecture*) and key texts by architects, such as Robert Venturi, Aldo Rossi, and James Stirling. Students explore a number of architects who have been overlooked and deserve renewed consideration. No meaningful scholarly investigation, however modest, can be said to be without motive. This seminar is motivated by conditions in contemporary practice, including the renewed interest in the postmodernism of the previous generation and in the return of precedent to the design process. Limited enrollment. Robert A.M. Stern

3284a, Architectural Writing 3 credits. The goal of this course is twofold: to introduce students to how writers have addressed and described places—buildings, terrain, built environments—and their relationships to such spaces; and through a series of assignments, using these readings as exemplary, to help students learn to write clearly about place themselves. Writing assignments include memory pieces, imaginative pieces, and descriptions of structures and landscapes in New Haven. The seminar treats the page itself as a place in which ideas about place, including current projects and proposals, can be articulated and made legible to readers both inside and outside the architectural community. Students write six essays: the first five are short (1,200 words), on a specific prompt; the last is a longer essay (2,500 words) describing and detailing a current student project. Each student shares work with the class on a weekly basis. Enrollment limited. Cynthia Zarin

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

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

AFAM 150b/HSAR 380b/WGSS 377b, The Body in Art since 1945 The image of the body in art from 1945 to the present. Themes include identity and changing models of personhood; constructions of gender, race, and sexuality; embodied perception as it is

mediated by technology and ecology; issues of medium and materials in painting, sculpture, performance, photography, film, and installation; and the corporeal dimensions of aesthetic experience. Kobena Mercer

AFAM 650a/ENGL 949a, Afro-Modernisms This course considers key debates, texts, and institutions that have shaped African American culture in the twentieth and twenty-first centuries. Possible topics include the New Negro movement, the Black Arts movement, black internationalism, canon formation, and Afro-futurism. Anthony Reed

AFAM 839b/HSAR 785b, Cross-Cultural Issues: From Modern to Contemporary Examines the changing vocabulary in which cross-cultural aesthetics have been discussed in the twentieth-century shift from “modern” to “contemporary” art. Concepts of creolization, hybridity, syncretism, and transculturation are examined in their disciplinary sources and as taken up in art criticism, against the background of modernist paradigms of primitivism, internationalism, and universalism. More so than artists or artworks, the basic unit of analysis is the art exhibition, from the national pavilions of the first Venice Biennale in 1895 to such curatorial initiatives as Jean Hubert Martin’s *Magiciens de la terre* and Okwui Enwezor’s *The Short Century: Independence and Liberation Movements in Africa, 1945–1994*. Kobena Mercer

AFAM 846a/AFST 747a/CPLT 725a/FREN 946a, Postcolonial Theory and Its Literature A survey of theories relevant to colonial and postcolonial literature and culture. The course focuses on theoretical models (Orientalism, hybridity, *métissage*, *créolité*, “minor literature”), but also gives attention to the literary texts from which they are derived (francophone and anglophone). Readings from Said, Bhabha, Spivak, Mbembe, Amselle, Glissant, Deleuze, Guattari. Conducted in English. Christopher Miller

ARCG 110b/HSAR 110b, Introduction to the History of Art: Global Decorative Arts Global history of the decorative arts from antiquity to the present. The materials and techniques of ceramics, textiles, metals, furniture, and glass. Consideration of forms, imagery, decoration, and workmanship. Themes linking geography and time, such as trade and exchange, simulation, identity, and symbolic value. Edward Cooke

ARCG 120a/HSAR 200a, Art and Architecture of Mesoamerica Art and architecture in Mexico and Central America from the beginnings of urban settlement to the Spanish invasion. Examination of the Olmec, Maya, Teotihuacan, Zapotec, Mixtec, and Aztec cultures, with particular attention to meaning and cultural identity as expressed in monumental sculpture, handheld objects, and the built environment. Mary Miller

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

ARCG 239b/HSAR 239b/NELC 104b, Art of the Ancient Near East and Aegean Introduction to the art and architecture of Mesopotamia, Egypt, and the Aegean, with attention to cultural and historical contexts. Karen Foster

ARCG 243a/CLCV 160a/HSAR 243a, Greek Art and Architecture Monuments of Greek art and architecture from the late Geometric period (ca. 760 B.C.E.) to Alexander the Great (ca. 323 B.C.E.). Emphasis on social and historical contexts. Millette Gaifman

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

CLCV 405b/HUMS 405b, Interpretations: The Parthenon Exploration of the Parthenon in history, including its religious, political, and cultural functions, as well as the history of encountering and interpreting the Parthenon across all media (archaeology, architecture, art, film, literature, photography) from antiquity to hypermodernity. Millette Gaifman, Emily Greenwood

CPLT 699a/GMAN 603a/PHIL 602a, Heidegger’s *Being and Time* A systematic, chapter-by-chapter study of Heidegger’s *Being and Time*, arguably the most important work of philosophy of the twentieth century. All the major themes of the book are addressed in detail, with a particular emphasis on care, time, death, and the meaning of being. Martin Hägglund

CPLT 882a/ENGL 709a/RUSS 882a, What Happened to Race, Class, and Gender? Keywords of Recent Critical Theory What did happen to race, class, and gender? This course examines the persistence of older theoretical frameworks such as Marxism or feminism in current critical discourse. It also explores new critical keywords—biopolitics, affect, the Anthropocene, and others—that now help structure theoretical debates in the humanities. Intended as a fast-paced, reading-heavy introduction to recent critical theory, the course will help graduate students in literature acquire a better sense of their field of study and reflect upon the methodologies they will use in their dissertation projects. Readings include the work of older theorists such as Jacques Derrida, Theodor Adorno, Michel Foucault, Judith Butler, and Donna Haraway, as well as recent ones such as Jasbir Puar, Sianne Ngai, Tiqqun, Paolo Virno, and Dipesh Chakrabarty. Ayesha Ramachandran, Marta Figlerowicz

EALL 555b, Japanese Modernism Japanese literature and art from the 1920s through the 1940s. The avant-garde and mass culture; popular genre fiction; the advent of new media technologies and techniques; effects of Japanese imperialism, militarism, and fascism on cultural production; experimental writers and artists and their resistance to, or complicity with, the state. Seth Jacobowitz

EALL 892a/FILM 874a, Japanese New Wave Cinema This course explores the “New Wave” in Japanese cinema in the context of the rise of “new wave” across cinemas in the American sphere in the period roughly between 1955 and 1975. It focuses on both local contexts and global flows in the turn to experimental filmmaking in Japan, paying particular attention to how films sought to make social and political interventions in both content and form. We analyze New Wave films and critical writing by asking what they can tell us about Japan’s postwar, high-speed economic growth, student and counterculture movements, and place in the Cold War order. We also consider what the Japanese

New Wave tells us about the possibilities of cinema: its global simultaneity, transcultural movement, and historical trajectory. Topics include the legacy of World War II in Japan and cinema as a mode for narrating history; the rise of global youth culture in the context of postwar economic growth; cinema and protest against the U.S.–Japan Security Treaty; the aesthetic use of sex, violence, and politics to shock mainstream culture; documentary as a site for radical experimentation; the studio system, independent filmmaking, and transformations of the Japanese film industry; and what is meant by “modernist” and “avant-garde” in New Wave cinema. Stephen Poland

ENGL 357a/LITR 426a/WGSS 340a, Feminist and Queer Theory Historical survey of feminist and queer theory from the Enlightenment to the present, with readings from key British, French, and American works. Focus on the foundations and development of contemporary theory. Shared intellectual origins and concepts, as well as divergences and conflicts, among different ways of approaching gender and sexuality. Jill Richards

ENGL 833a/AMST 723a, The Nonhuman in Literature and Culture since 1800 Non-human life forms in fiction and poetry from the nineteenth century to the twenty-first, including plants and animals, “legal persons” such as corporations, large-scale phenomena such as the market and the Internet, war and environmental catastrophes, as well as intelligent machines and extraterrestrial aliens. Authors include Herman Melville, Emily Dickinson, Upton Sinclair, Elizabeth Bishop, Louise Erdrich, Richard Powers, Don DeLillo, Cormac McCarthy, Philip K. Dick, Ursula Le Guin, Octavia Butler, Dave Eggers. Theorists include Giorgio Agamben, Jane Bennett, Jacques Derrida, Donna Haraway, N. Katherine Hayles, Fredric Jameson, Brian Massumi, Timothy Morton. Wai Chee Dimock

EP&E 487a/GMAN 212a/HUMS 261a/PHIL 417a, Critical Theory and the Frankfurt School Introduction to the thought and writings of the philosophers known as the Frankfurt School, who founded and developed the idea of Critical Theory. The method of Critical Theory as a way of thinking about the complex relations between philosophy and society, culture and politics, and philosophical concepts and social reality. The meaning of concepts such as critique, history, freedom, individuality, emancipation, and aesthetic experience. Asaf Angermann

FILM 306b/EALL 270b, Anime and the Posthuman Japanese anime and its conceptions of the posthuman condition made possible by advances in science and technology. The persistence of myth, archetype, and humanist philosophy. Seth Jacobowitz

FILM 442a/LITR 403a/RUSS 403a, The City in Literature and Film Consideration of the architecture, town planning, and symbolic functions of various cities in Europe, Latin America, the United States, and East Asia. Discussion of the representation of these cities in literature and film. Works include older Soviet and Chinese films about Shanghai and contemporary films about Hong Kong and Beijing. Katerina Clark

GMAN 374a/LITR 307a, Walter Benjamin and the Modernization of Nineteenth-Century Paris The radical modernization of Paris under the Second Empire (1851–70) as seen through the eyes of Walter Benjamin. Focus on Benjamin’s *Arcades Project*, a compendium that charted developments such as Parisian mass transit and streamlined

traffic, the construction of apartment houses, and the dissemination of mass media. Readings from other literary texts on the same events include works by Balzac, Zola, and Aragon. Henry Sussman

GMAN 649a/JDST 651a/PHIL 617a, Critical Theory and the Frankfurt School This course is an introduction to the thought and writings of the philosophers known as the Frankfurt School, who founded and developed the idea of Critical Theory. Taken in its original meaning as a method or even a practice, rather than a systematic theory, Critical Theory suggests a way of thinking about the interrelations between philosophy and society, culture and politics, and on the complex relation between philosophical concepts and social reality. By reading key texts of Frankfurt School authors such as Adorno, Horkheimer, Marcuse, Benjamin, Kracauer, and Fromm, the course inquires into the meaning of concepts such as critique, history, freedom, individuality, emancipation, and aesthetic experience. Asaf Angermann

GMAN 678a/CPLT 907a/FILM 796a, Media Archaeologies: The Visual and the Environmental The seminar aims at retracing two divergent cultural processes: how and why, starting from the discovery of artificial perspective, an increasing number of cultural practices were devoted to making the world visible; and correlatively how and why, starting from the first half of the nineteenth century, visibility increasingly met with the resistance of other modes of accessing the world through the human body and the role of the environment? These two trajectories are retraced through a special attention to the media that were on the forefront of these cultural processes: from Brunelleschi’s mirror to Alberti’s window and grid, from camera obscura to Galileo’s telescope, from Panorama to Phantasmagoria, from the optical toys of the nineteenth century to the increasing implication of art into social and political questions. The seminar privileges the cultural practices that underpin both the trust in visibility and the discovery of environmental-ity, and it gives due attention to the political questions that the changing fortunes of the optical media imply. The seminar is the first part of a two-year project and will be followed next year by an analysis of the prevalence of the environmental dimension in contemporary media. Francesco Casetti, Rüdiger Campe

HSAR 143b/RLST 188b/SAST 260b, Introduction to the History of Art: Buddhist Art and Architecture, 900 to 1600 Buddhist art and architecture of East Asia, Southeast Asia, and Tibet from the tenth century to the early modern period. Emphasis on cross-regional engagements including the impact of Islam. Mimi Hall Yiengpruksawan

HSAR 455a, Conceptualization of Space Introduction to the discipline of architecture through the elusive concept of space. This course traces key shifts in the conceptualization of space in aesthetics and architectural theory from the eighteenth century to the present. Craig Buckley

HSAR 485b, Global Gothic Introduction to nineteenth-century Gothic Revival architecture from traditional points of origin in England and France to its prime zone of influence, the United States, with special attention to college campuses, Yale’s campus included. Further exploration of the global impact across Europe, North and South America, Africa, Asia, especially Southeast Asia, Australia, and New Zealand. Robert Nelson

HSAR 496a, Surface Exploration of the symbolic, formal, and discursive qualities and characteristics of surface in modern and contemporary art, in particular post-painterly abstraction, structural film, photorealism, and body and performance art. Study of conceptual units (e.g., flatness, horizontality) and readings in modern and contemporary art history including Greenberg, Steinberg, and Krauss, as well as relevant texts from psychoanalytic and poststructural theory. Max Rosenberg

HSAR 620a, The Early Modern Book This course addresses the material culture of the book from the dawn of the printing press through the seventeenth century. It considers the transition from manuscript to print, the rise of the book industry, and the collaborations between publishers, authors, and artists that were central to the nature of books both as objects and vehicles of knowledge. Topics include frontispieces, dedications, typography, and page design; major early modern genres of visual and intellectual production (such as emblem books, scientific treatises, polyglot bibles, and cartographic atlases); as well as the cultural histories of reading, translation, and library collections. An art historical approach to book history. All seminars take place in Beinecke Library and center on close firsthand study of the books themselves. Marisa Bass

HSAR 657b, What Is Baroque? “What is baroque?” is an ongoing question that has changed focus every time it has been raised. Answers differ according to whether “baroque” may simply serve as an umbrella term labeling a certain historical period or characterize specific aesthetic features that can be found even in the arts of the twenty-first century: for example, the “highly emotional character” and the “vivacious mixture of reality and imagination” (Erwin Panofsky) attributed to it. In this seminar, both perspectives are connected. The course examines the most prominent philosophical positions establishing “Baroque” as a category for a specific way of thinking and conceptualizing the world, and shows how an array of “baroque” styles appeared in the seventeenth century. We first consider the concept of the “neo-baroque” (C. Buci-Glucksmann, O. Calabrese) and deal with Walter Benjamin’s explanation of the origin of German tragic drama and with Alois Riegl’s *Origins of Baroque Art in Rome*. We search for clues to the conception of Baroque thinking in Gilles Deleuze’s analysis of Leibniz’s fold and examine critically Heinrich Wölfflin’s formalistic approach and his differentiation of classicism and baroque. We then look at several European cultures that have established a Baroque style in the visual arts and discuss in this respect the category of the Golden Age. We examine the impact of the Roman Counter-Reformation, Spanish Mysticism, and Dutch Protestantism on the regional moldings of Baroque style and their specific attitude toward early modern globalism. We consider the central aesthetic concepts and their backdrop: “naturalism” versus Mannerism, “representation” versus mimesis, and “theatricality” versus order. We discuss the artistic positions, amongst others, of Bernini, Borromini, Caravaggio, Carracci, Claesz, Pietro da Cortona, Kalf, Murillo, Poussin, Rubens, Rembrandt, Velázquez, Zurbarán. Nicola Suthor

HSAR 747a, Architecture and the Kinetic Image This seminar examines the relationship between concepts of architectural and cinematic space in the twentieth century. The aim is to provide an introduction to the literature on architecture and cinema and to examine a series of laboratories, buildings, sets, pavilions, and environments marked by the impact of moving images, encounters that have transformed concepts of space

and expanded the media through which architects think and work. Examining the collaborations of architects, film directors, set designers, critics, and technicians, the course probes the evolving nature of technologies of the kinetic image, and its complement, the manner in which architects have increasingly sought to conceptualize space in terms of movements and flows, from that of the human body, to the automobile, to information. Topics may include Étienne-Jules Marey’s experimental station; expressionist film sets; film experiments at the Bauhaus; cinema design in Weimar Berlin, Amsterdam, and Paris; the multiscreen films of Charles and Ray Eames; the Philips Pavilion; Intermedia environments of the 1960s; the use of film in urban analysis by Donald Appleyard, Denise Scott Brown, and Robert Venturi; the projection environments and multimedia pavilions of Expo ’70; early video installations by Dan Graham and Dara Birnbaum; and the introduction of computer animation into architectural design. Craig Buckley

HSAR 829b, Baudelaire The work of poet and art critic Charles Baudelaire, a pivotal figure in the history of both romanticism and modernism, has had a significant afterlife in modern art theory and criticism, modern literature, and modern thought about everything from pornography to photography, and from caricature to comedy, as well as cities, industrial forms, the temporality of modern life, modern art, modern music, and modern poetry. This interdisciplinary seminar pairs Baudelaire’s writing with the work of a variety of other figures of his and our time, from the artists Goya, Delacroix, Guys, and Manet; the photographers Nadar, Carjat, Disdéri, Marville, Le Gray, and Atget; the art critics Gautier and Zola; the Symbolist poets Mallarmé and Verlaine; the writers and artists of the Surrealist movement; and the composers and performers Wagner, Debussy, and Diamanda Galás; to the work and thought of Walter Benjamin concerning Parisian modernity, and the ideas of Sigmund Freud about dreams and the unconscious. We stress the visual, art historical, and art critical ramifications of Baudelaire’s work—in particular his *Salons* and *Le Peintre de la vie moderne*, but also his poetry and other writings. Many of these texts are translated into English, but as much as possible we try to read and discuss them together in the original French. Carol Armstrong

HUMS 330a/GMAN 227a/LITR 330a/PHIL 402a, Heidegger’s Being and Time Systematic, chapter-by-chapter study of Heidegger’s *Being and Time*, arguably the most important work of philosophy in the twentieth century. All major themes addressed in detail, with particular emphasis on care, time, death, and the meaning of being. Martin Hägglund

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

PHIL 718a/LAW 20104/PLSC 553a, Social Justice An examination of contemporary theories, together with an effort to assess their practical implications. Authors this year include Peter Singer, Richard Posner, John Rawls, Robert Nozick, Michael Walzer, Marion Young, Avishai Margalit, and Cass Sunstein. Topics: animal rights, the status of children and the principles of educational policy, the relation of market justice to distributive justice, the status of affirmative action, and the rise of technocracy. Self-scheduled examination or paper option. Follows Law School academic calendar. Bruce Ackerman

WGSS 306a/AMST 314a, Gender and Transgender Introduction to transgender studies, an emergent field that draws on gender studies, queer theory, sociology, feminist science studies, literary studies, and history. Representations of gender nonconformity in a cultural context dominated by a two-sex model of human gender differentiation. Sources include novels, autobiographies, films, and philosophy and criticism. Greta LaFleur

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 3237b will fulfill the Urbanism and Landscape elective requirement, although it cannot fulfill both the History and Theory and the Urbanism and Landscape elective requirements. Courses offered outside the School not listed below may fulfill this elective requirement provided permission from the study area coordinators has been granted.

Required Courses

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

4021a, Introduction to Planning and Development 3 credits. (Required of second-year M.Arch. I students.) This course demonstrates the ways in which financial and political feasibility determine the design of buildings and the character of the built environment. Students propose projects and then adjust them to the conflicting interests of financial institutions, real estate developers, civic organizations, community groups, public officials, and the widest variety of participants in the planning process. Subjects covered include housing, commercial development, zoning, historic preservation, parks and public open space, suburban subdivisions, and comprehensive plans. Alexander Garvin

Elective Courses

[4211b, Intermediate Planning and Development 3 credits. This seminar examines the interaction of property development and planning with local market conditions, financing alternatives, government policy, and the political context at the community level.

During the first part of the term, students learn how to analyze a specific neighborhood (in New York City) by using fundamental planning techniques and examining national trends within that neighborhood. Topics include housing, retail, and office development; zoning; historic preservation; transportation; business improvement districts; and building reuse and rehabilitation. In the second part of the term students prepare recommendations for the neighborhood that will meet the conflicting interests of financial institutions, real estate developers, civic organizations, community groups, public officials, and a wide variety of participants in the planning and development process. The end product is a printed book presenting the results of their work. Prerequisite: 4021a, STCY 176b, or equivalent course work. Limited enrollment. Not offered in 2017–2018. Alexander Garvin]

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

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

4221b, Introduction to Commercial Real Estate 3 credits. This seminar introduces commercial real estate. It does not require any prior knowledge of finance, accounting, or taxation policies. Commercial real estate is income-producing property that is built, financed, and sold for investment. This course examines five basic types of commercial real estate (office, industrial, retail, multifamily, and hotel) from the standpoints of the developer, lender, and investor. Principles of location, financing, timing of market cycles, leasing, ownership structure, and external factors are explored. Students are expected to evaluate assets, partnership interests, and other positions such as debtor interests through valuation measurement, which requires the use of some simple mathematics. An HP-12C calculator or laptop computer with Excel for use in class is required. Students

also examine commercial deeds, leases, partnership agreements, and other legal documents. Each student selects a building or development site within New Haven County for a due diligence analysis of zoning, real estate taxes, deeds, liens, market supply and demand, projected income and expenses, and availability of debt. In addition to out-of-class assignments, a brief exercise is included during each class. Limited enrollment. Kevin D. Gray

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

4223b, History of British Landscape Architecture: 1500 to 1900 3 credits. This seminar examines chronologically the history of landscape architecture and country-house architecture in Britain from 1500 to 1900. Topics of discussion include the history of the castle in British architecture and landscape architecture; Italian and French influences on the seventeenth-century British garden; military landscaping; the Palladian country house and British agricultural landscape; Capability Brown's landscape parks; theories of the picturesque and of the landscape sublime; Romanticism and the psychology of nature; the creation of the public park system; arts and crafts landscape design; and the beginnings of landscape modernism. Comparisons of historical material with contemporary landscape design, where appropriate, are made throughout the term. The collection of the Yale Center for British Art is used for primary visual material, and a trip to England over spring break, partially funded by the School, allows students to visit firsthand the landscape parks studied in this seminar. Limited enrollment. Bryan Fuermann

4226b/F&ES 888b, Ecological Urban Design 3 credits. This course lays the groundwork for students from the School of Architecture and the School of Forestry & Environmental Studies to collaboratively explore and define ecologically driven urban design. The goal is to work as an interdisciplinary group to cultivate a perspective on the developing field of urban ecology and approaches to implementing urban ecological design. The transformation of urban ecology from a role in studying a system to studying and shaping urban ecosystems is a primary focus for the course, which concentrates on the following 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? The course uses the Earth Stewardship Initiative, a large land-planning project developed for the Ecological Society of America in Sacramento, Calif., to create a real-world project where interdisciplinary

teams can work to combine ecological applications and design with the goal of shaping urban systems to improve the ecological, social, and infrastructural function of city components. Limited enrollment. Alexander Felson

4233b, Ghost Towns 3 credits. This is an advanced, interdisciplinary seminar in architectural history, urban planning, vernacular building, the politics of preservation, collective memory, tourism, and, ultimately, urban sustainability. Looking at a broad spectrum of failed or almost-failed cities in the United States and across the globe, this seminar uses the ghost town and its rhythms of development and disinvestment to establish a conceptual framework for contemporary urban patterns and processes. Students develop skills in urban and architectural research methods, visual and formal analysis, effective writing, and critical reasoning. Limited enrollment. Elihu Rubin

4234b, Residential Design, Development, and Management 3 credits. This seminar examines the creation and evolution of residential housing in the United States over the past century. Individual sessions are devoted to a critical and in-depth review of housing types and their development in both urban and suburban environments and to the exploration of the architectural, financial, legal, marketing, and social issues involved in the creation, management, and maintenance of housing. The seminar includes scheduled visits to specific examples of for-profit, nonprofit, and government-developed residential properties where students meet and speak with the designers and developers responsible for the building's construction and management. Prerequisite: 4021a, STCY 176b, or the equivalent. Limited enrollment. Alexander Garvin, Ryan Salvatore

4240b, Landscapes of Fulfillment: Architecture and Urbanism of Contemporary Logistics 3 credits. This seminar explores the ways in which the logistics industry is transforming the built environment. Once the domain of the industrial engineer or the quartermaster, logistics now affects increasingly large areas of everyday life, including significant aspects of architecture and urbanism. Through readings, discussions, and case studies, the seminar examines the historical and theoretical sources of logistics before looking more closely at a series of corporate actors that define themselves through logistics in significant ways, including Walmart, Amazon, IKEA, and Tesla. Through these discussions, the seminar engages debates related to infrastructure, automation, mobility, policy, publicness, labor, and aesthetics. The work of this course includes both visual and textual analysis as well as written and graphic production. Participants in the seminar develop an archive, a research paper, and original visualizations that investigate a contemporary logistical actor or technology. Limited enrollment. Jesse LeCavalier

4241b, The Future of American Infrastructure 3 credits. Vitruvius describes the architect's responsibility for building private structures as only a *secondary* pursuit—their primary function is the design of “works for general use in public places,” best translated into contemporary parlance as “infrastructure.” This seminar assumes the simple counterfactual that architects, as they were during the time of Vitruvius, are again responsible for the design of all national, state, and local infrastructures. As an axiom the course assumes that the resources, estimated at \$20 trillion through 2050, slated for the upkeep of the old infrastructure of the twentieth century, largely driven by the needs of cars and petroleum, instead be used to fund new ideas, designed by students, that may involve

solar fields, algae farming, hydrogen cells, geothermal drilling, hyper-efficient batteries, industrial drones, and magnetic levitation or may involve systems that speculate even farther into the future of technological, and cultural, possibilities. For this ambitious project, Yale is collaborating with the Southern California Institute of Architecture (Sci-Arc) with two simultaneously taught courses: a seminar at Yale and a studio at Sci-Arc. Students work on a single project for the term, individually or in groups, and speculate on particular aspects of the future of American infrastructure in which they are interested. Each project is limited to a budget of \$20 trillion US. Partially funded by the School, Yale students join the Sci-Arc students for a joint workshop in Los Angeles over a five-day period during Yale's two-week spring break. Enrollment limited to ten. Mark Foster Gage

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

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

AFAM 270b/PLSC 280b, Poverty, Politics, and Policy in the American City Examination of how politics informs the formulation and implementation of policies to address urban poverty. Consideration of alternative explanations for poverty and alternative government strategies. Focus on efforts by local organizations and communities to improve their situations within the context of government actions. Cynthia Horan

AFAM 420a/FREN 417a/MMES 349a, Postcolonial Cities Critical study of literature and film that charts urban spaces in the French colonial empire and the francophone postcolonial world. Readings and topics include Paris as imperial capital and site of anti-imperial movements; Dakar, Senegal, in Ousmane Sembène's *Black Girl* (novel and film); Fort-de-France, Martinique, in Césaire's *Notebook* and Chamoiseau's *Solibo magnifique*; Algiers in Assia Djebar's *Women of Algiers* and Samir Toumi's *Alger, le cri*; Tunis in Abdelwahab Meddeb's *Talismano*; Casablanca in Mahi Binebine's *Les étoiles de Sidi Moumen*; and Abderrahmane Sissako's film *Timbuktu*. Reading knowledge of French required (FREN 160 or above).

AMST 196a/AFAM 196a/ER&M 226a/EVST 196a/SOCY 190a, Race, Class, and Gender in American Cities Examination of how racial, gender, and class inequalities have been built, sustained, and challenged in American cities. Focus on the twentieth and twenty-first centuries. Topics include industrialization and deindustrialization, segregation, gendered public/private split, gentrification, transit equity, environmental justice, food access, and the relationships between public space, democracy, and community well-being. Includes field projects in New Haven. Laura Barraclough

AMST 206b/ER&M 221b/WGSS 222b, Introduction to Critical Refugee Studies Reconfiguring refugees as fluid subjects and sites of social, political, and cultural critiques. Departing from dominant understandings of refugees as victims, consideration instead of refugees as complex historical actors, made visible through processes of colonization, imperialism, war, displacement, state violence, and globalization, as well as ethical, social, legal, and political transformations. Focus on second half of the twentieth century. Quan Tran

AMST 348a/EVST 304a, 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 622a and AMST 623b/CPLT 622a/822b, Working Group on Globalization and Culture A continuing collective research project, a cultural studies “laboratory,” that has been running since the fall of 2003. The group, made up of graduate students and faculty from several disciplines, meets regularly to discuss common readings, to develop collective and individual research projects, and to present that research publicly. The general theme for the working group is globalization and culture, with three principal aspects: (1) the globalization of cultural industries and goods, and its consequences for patterns of everyday life as well as for forms of fiction, film, broadcasting, and music; (2) the trajectories of social movements and their relation to patterns of migration, the rise of global cities, the transformation of labor processes, and forms of ethnic, class, and gender conflict; (3) the emergence of and debates within transnational social and cultural theory. The specific focus, projects, and directions of the working group are determined by the interests, expertise, and ambitions of the members of the group, and change as its members change. There are a small number of openings for second-year graduate students. Michael Denning

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

ANTH 539b, Urban Ethnographies of Asia Introduction to the anthropological study of contemporary Asian cities. Focus on new ethnographies about cities in East, Southeast, and South Asia. Topics include rural-urban migration, redevelopment, evictions, social movements, land grabbing, master-planned developments, heritage preservation, utopian aspirations, social housing, slums and precariousness, and spatial cleansing. Erik Harms

ANTH 575a/EAST 575a, Hubs, Mobilities, and Global Cities Analysis of urban life in historical and contemporary societies. Topics include capitalist and postmodern transformations, class, gender, ethnicity, migration, and global landscapes of power and citizenship. Helen Siu, Sarah LeBaron von Baeyer

CPLT 589a/GMAN 645a, Walter Benjamin and the Modernization of Nineteenth-Century Paris The radical modernization of Paris under the Second Empire (1851–70) as seen through the eyes of Walter Benjamin. Focus on Benjamin's Arcades Project, a compendium that charted developments such as Parisian mass transit and streamlined traffic, the construction of apartment houses, and the dissemination of mass media. Readings from other literary texts on the same events include works by Balzac, Zola, and Aragon. Henry Sussman

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

EVST 292a/GLBL 217a/PLSC 149a, Sustainability in the Twenty-First Century Sustainability as an overarching framework for life in the twenty-first century. Ways in which this integrated policy concept diverges from the approaches to environmental protection and economic development that were pursued in the twentieth century. The interlocking challenges that stem from society's simultaneous desires for economic, environmental, and social progress despite the tensions across these realms. Daniel Esty

F&ES 530a, Ecosystems and Landscapes This Foundations course is an introduction to concepts in ecosystem and landscape ecology. Topics covered include element cycling, food web interactions, species-area relationships, whole system metabolism, models of biodiversity, etc. The course emphasizes how to integrate knowledge to understand ecological patterns and processes at multiple scales in order to study, manage, and conserve species and ecosystems. Mark A. Bradford, Peter A. Raymond

F&ES 627a, American Environmentalism What is environmentalism? The purpose of this seminar is to rigorously discuss that question and use our answers to better understand why we work to protect the environment, with a constant focus on what diverse environmental perspectives mean for environmental policy and law. This course focuses on the tools and tactics of environmental protection, but also on the values that drive environmentalism. The course in part traces the history of environmentalism, studies campaign techniques, and analyzes environmental laws, but we look at these issues in the broader context of what it means to be an environmentalist. Through our discussions we try to construct a vision of effective and lasting environmentalism for the present and the future while challenging ourselves to think about our own values and theories of change, about why we entered this field in the first place. Joshua Galperin

F&ES 710b, Coastal Governance Effective governance combines a basic understanding of natural systems with human values to create new coastal institutions. Single-use regulations of the past (energy, wastewater, ports, marsh conservation) are being replaced by more holistic thinking (spatial management and/or ecosystem-based management). To understand the state of this transition, policy analysis frameworks are applied to sector-based and ecosystem-based management initiatives. Term projects allow student teams to consider the merit of various alternatives that they create to address contemporary problems, which have included sea-level rise, hurricane damage, fisheries, and management in developing countries. F&ES 515 and 525 or equivalent knowledge recommended. Three hours seminar; term project. Enrollment limited to eighteen. Richard Burroughs

F&ES 716b, Renewable Energy Introduction to renewable energy, including physical principles, existing and emerging technologies, and interaction with the environment. Energy demand; transmission and storage; generation by hydroelectric, wind, solar, biofuel, and geothermal sources, as well as waves and tidal generation. Includes field trips to conventional, hydroelectric, and wind-power facilities in Connecticut. Prerequisites: high school physics, chemistry, and mathematics; college-level science, engineering, and mathematics recommended. Ronald B. Smith

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

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

F&ES 795b, Nature as Capital: Merging Ecological and Economic Models This course helps students understand concepts from and develop skills in natural resource economics. It is designed to familiarize students with concepts and tools for thinking about natural resources as capital assets with a specific link to quantitative measures that may be useful in assessing sustainability. Students gain a working knowledge of concepts necessary to apply capital theory to ecosystems and develop a skill set sufficient to build dynamic bioeconomic models that can help them approximate the value of changes in ecosystems. Students also learn computational tools in dynamic optimization, which are useful for forward-looking decision-making. Eli P. Fenichel

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

F&ES 817a, Urban, Suburban, and Regional Planning Practice This course explores the challenges and opportunities faced by America's suburban communities and urban centers as they work to become more sustainable and livable. 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. Land use plans and regulations, private development, and public infrastructure shape our communities and determine where and how we use land. 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 explores the dynamic trends facing the United States and its communities and the evolution in planning practice that is occurring at the local and regional scale to address them. This course is part of the concentration in land use and planning, a subset of classes under the specialization in sustainable land management. This subset is for students interested in the interface of environmental issues with land use, planning, and development. The other courses in the subset are F&ES 820 and 835. David Kooris

FILM 394b/ENGL 198b/LITR 409b/RSEE 350b, Internet Cultures, Histories, Networks, and Practices Examination, through the lenses of histories, network studies, and cultural studies, of how human beings have seemingly overnight learned to use and depend on computer networks for various kinds of work, military operations, pursuits of scientific knowledge, religious proselytizing, political organization, searches for mates and social communities, illegal activities, and infinite varieties of play. Marijeta Bozovic, Marta Figlerowicz

FILM 733b/AMST 834b, Documentary and the Environment The environmental documentary has emerged as one of cinema's most vital genres of the past ten years (in documentary, its only rivals are probably those concerned with the Second Gulf War). As the world's environment faces a growing crisis, documentary has come to serve as a key means to draw public attention to specific issues. This course combines screenings with readings on documentary such as Bill Nichols's important book *Representing Reality*. Often films have book tie-ins, and we consider how they complement each other and

work together to maximize the impact of their message. Readings also focus on news items, debates, websites, and other media forms that are employed in conjunction with the films. Charles Musser

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

HIST 742b/HSHM 732b, Readings in the Environmental Humanities An interdisciplinary seminar to explore the emerging field of the environmental humanities. This reading course examines how humanities disciplines can best contribute to a broad scholarly and societal conversation about humanity and the fate of the planet. We consider how environmental problems and questions might reshape humanities teaching and research, and what humanities scholars can learn through greater collaboration with social and nature scientists. This seminar draws on faculty expertise from a range of humanities disciplines and engages students in defining the field, including designing possible future courses in the environmental humanities. Paul Sabin

HSAR 445b, Art, Nature, and the Modern World Exploration of the emergence of natural history, still-life painting, collectors' cabinets, global expeditions of discovery, and technologies for scientific sight, and looking at works by artists from Albrecht Dürer to Robert Smithson. Using images and artifacts from collections across campus, student study the unstable boundary between art and nature, a driving obsession for creative and cultural production from the Renaissance to the present. Marisa Bass

HSAR 452b, Landscape, Mobility, and Dislocation The study of landscape, during the long nineteenth century, as a powerful and contested artistic medium that could express the ideologies of empire, philosophies of nature, the relationship between geography and vision, and constructions of self and other. Review of such issues in American landscape painting in both a transatlantic and transhemispheric context with specific attention to works in Yale collections. Jennifer Raab, Tim Barringer

MGT 536b, Urban Poverty and Economic Development This term-long course provides an examination of current theory, research, and policy on urban poverty and community development in the United States as a background for developing community wealth-building economic development interventions in city and community settings. Topics include: (1) measurements and theoretical explanations of poverty, incorporating both panel data and ethnography; (2) analytic tools for assessing community and regional economic flows; and (3) strategies for economic development and wealth building among the low income urban populations and communities. We examine innovative approaches in the traditional areas of economic development practice areas of business creation and development, workforce development and skills training, housing, education, and individual income support and wealth building. Strategies to explore include place-based anchor strategies, development through local food hubs, sector strategies for workforce development training, worker ownership, affordable housing and community land

trusts, community development banks and credit unions, micro enterprise and asset-building strategies. The course is designed to give students both a broad overview of theory, research, policy, and current trends in urban poverty and community development through readings, guest lectures, and case-based discussions, and the opportunity to self-direct their exploration of an aspect of the economic development literature covered in the course literature more deeply. Kate M. Cooney

MGT 849a, Cases in Commercial Real Estate William N. Goetzmann

MGT 895a, International Real Estate This half-term course provides an introduction to real estate development, investment, finance, and strategy outside of the United States. Global investment in financial assets, the need for risk diversification, the increased accuracy of property records, greater transparency, more relaxed laws permitting foreign investment, and population movement around the world – all of these trends have led to a tremendous increase in cross-border real estate investing for both private equity and public companies. While many studies of international real estate focus on the role of foreign real property in the U.S. institutional portfolio, this course takes a wider and more historical view of the cultural attitudes toward real estate around the world and how they impact the quality and risk of investment assets. Detailed analysis begins with property-level due diligence in order to provide a fundamental understanding of how and why property markets differ by country beyond simple supply/demand dynamics. This course consists of three parts: (1) a micro-market analysis of real property characteristics in various countries around the world, including financing, leasing, and valuation; (2) an analysis of investment vehicles – public and private – available to institutional investors, as well as cross-border transactions; and (3) a macro-market view of world space and capital markets, the rationale for international investing, trends in capital flows and portfolio composition, and the various ways in which risk is measured and mitigated. Each part of the course requires a brief individual assignment completed over a two-week period. The first research project is a study of a significant real property asset outside of the United States, including its market, ownership, legal structure, valuation, and transaction history. Both the G-8 and G-20 nations will be the object of study, but individual students are free to concentrate on any country of interest. The second research project consists of an analysis of a private equity or publicly traded foreign property company, its current fair value, competitive advantage, and future prospects. An interview with a top executive of a company will be encouraged and facilitated. The third research project consists of a comparative analysis of world property markets and the hypothetical investment in a portfolio of real estate assets across three or more foreign property markets. The course consists of lectures, discussion, case studies, and readings on international real estate from a variety of sources. No final exam or group project is required. Kevin Gray

MGT 899b, Real Estate Finance for Institutional Investors This course concentrates on the five major types of institutional property investment: Office, Industrial, Retail, Hotel and Multifamily, and large-sized properties (>\$50M). Each session deals with the unique financial characteristics of a particular property type, via case study, modeling of cash flows, and income and expense analysis. The special market characteristics of each property type, buying, selling and current market conditions, are also discussed. Because

real estate can also be analyzed from the viewpoint of public and private markets and debt and equity markets, each session includes a discussion of a financing or equity vehicle and its relevance to a particular property type. In addition to case studies that require problem solving, students are expected to be able to model and value different property types; read and abstract leases and partnership agreements; and understand, quantify, and articulate the differing perspectives of investor/buyer, developer/seller, and lender/syndicator. As appropriate, guest speakers are introduced for the final forty-five minutes of at least half the sessions. A final team project requires working in groups of three to five students on the same portfolio of diverse real estate assets, with recommendations to be made to an investor group at the final class. Kevin Gray

PLSC 656a/GLBL 579a, Global Governance Examination of global policy problems, the acceleration of interdependence, and the role, potential, and limits of the institutions of global governance to articulate collective interests and to work out cooperative problem-solving arrangements. Consideration of gaps in global governance and controversies between globalization and state sovereignty, universality, and tradition. Yuriy Sergeyev

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