

Fall 2019 Elective Course Offerings as of 7/25/19

LANDSCAPE ARCHITECTURE

LARP 720-001: Topics in Representation: Landscape Drawing

Valerio Morabito

Tuesday, 10am-1pm

The research of an “Idea” of landscape and the training to the representation of it is the aim of this course. Sometimes it is easy to lose this “Idea” or it is impossible to recognize it because of the millions of images we can meet in every city, space, book, magazine and so on, and we often use them without a critical position. Maybe we have no particular training to break up an idea of landscape from a form of it. Traditional sketches, digital sketches, abstract models, alterations of pictures and a relationship between pictures and sketches, are the tools we will use to discover and to understand our personal and collective “Idea” of landscape. Tools we can use day by day, to form a personal training, in a way to preserve an abstract condition of space, an interior our own space, a special place where we will be able to preserve our idea of landscape. This course is open to all interested School of Design students who have previous drawing experience or have taken foundation studios.

LARP 730-001: Topics in Professional Practice: Transformational Leadership: Research and Practice

Lucinda Sanders

Wednesday, 3pm-6pm

This course is designed to explore aspects of transformational leadership which can provide greater agency to emerging landscape architects. Two possible conduits for expanding the field of landscape architecture are practice and research. These two means of expression will be woven together under the umbrella of transformational leadership. Registration will be limited to LARP students, others by permission of the instructor.

LARP 740-001: Topics in Digital Media: Sensing & Sensibilities: Arduinos, Drones, & Satellites

Keith VanDerSys, Sean Burkholder, Michael Luegering, Michael Tantala

Thursday, 9 am-12pm

As global ecological problems pileup, landscape architects are increasingly moving into sites and scales of immense physical and biological complexity. Considering these developments, the term “landscape” has arrived at a turning point; remote optics and radar are now our primary means of imaging and thus territorializing a “landscape.” The invisible world of NIR optics, radar, and algorithms have supplanted the previously dominant modes of imaging: human and photographic eyes. What are the epistemic impacts of this? Additionally, the trans-political nature of such far-reaching sites and scales makes good data procurement illusive; absent any singular governing body of territorial control, data collection and management are nonexistent. Our predictions and prescriptions, however, are dependent on the verity of spatial data. How then do we operate in these interstices?

Low cost, simple-to-use surveying and sensing equipment are increasingly available and accessible to designers. Sensing and syncing data collected across scales, however, remains cumbersome. Yet, imagining technologies form our primary means of translating and expressing our environment. Through hands-on field collection exercises and in-class demos, students will be introduced to an array of sensing tools that are central to collecting and analyzing environmental changes across scales: Arduino sensors; unmanned aerial vehicles (aka drones); RTK GPS receivers; and image recognition software. This technology and representation seminar will be taught collaboratively; the primary instructor will participate in all modules. Limited to LARP & Planning students who have successfully completed LARP 544 Media IV or equivalent. Instructor permission is necessary for registration. Course availability is limited.

LARP 743-401: Topics in Digital Media: Geospatial Software Design

Dana Tomlin

Wednesday, 9am-12pm

The purpose of this course is to equip students with a selected set of advanced tools and techniques for the development and customization of geospatial data-processing capabilities. The course is open to any student with experience equivalent to that of an entry-level class on GIS.

LARP 755-001: Arboretum Management I: Understanding Plants

Cynthia Skema

Tuesday, 1:30pm-4:30pm

In this course, students will learn about plants from an organismal perspective, an applied/practical perspective, an aesthetic perspective, an environmental perspective, and an evolutionary perspective. Utilizing the plant collection of the Morris Arboretum as a living laboratory and the expertise of arboretum staff, this course will bring all students, novices and experts alike, to a better understanding of plants. Session topics integrate both theoretical and hands-on practical work. Course assessment will be based on weekly practical assignments and two exams. Please note that this course takes place at the Morris Arboretum in the Chestnut Hill section of Philadelphia and students are responsible for transporting themselves to and from the arboretum on their own for class each week. For further information about the course, students may contact Cynthia Skema (cskema@upenn.edu).

LARP 770-001: Topics in History and Theory: History & Theory in Landscape Architecture

Sonja Duempelmann

Wednesday, 9am-12pm

Course description to be provided. Cross-listed with LARP 540 Theory II.

LARP 780-002: Topics in Theory and Design: Seeds & Weeds: The Knotty Natures of Botanical Gardens

Karen M' Closkey

Friday, 1pm-4 pm

Botanic gardens may seem a quaint relic at best (Sunday strollers twirling parasols) or, worse, an outmoded typology (along with zoos and archeology museums) with a sordid history of pillaging and empire building. And one could surely argue that these relatively small and bounded typologies are irrelevant in the face of rapid bio-diversity loss, massive urbanization, and resource depletion. However, botanic gardens are a locus from which to understand the myriad political, scientific, technical, and social interactions that are central to our discipline. There are upwards of 2500 botanic gardens worldwide, attracting half a billion visitors per year; a staggering statistic. Combining the science of botany and the art of display, botanical gardens are intertwined with the history of colonization. They began as medicinal gardens and were the sites of early scientific research and invention. This scientific mission continues today as botanical gardens evolve to become leaders in conservation efforts.

Through readings, lectures, guest lectures, the study of design precedents, and visits to nearby gardens, this course considers the history and evolution of botanical gardens through key themes that are at the root of this typology: Colonization; Classification; Cultivation; Collection; and Conservation. Registration will be limited to School of Design students, others by permission of the instructor.

LARP 780-003: Topics in Theory and Design: Post-Carbon Futures & the Green New Deal

Nick Pevzner

Monday, 9am-12pm

The highly ambitious Green New Deal (GND) aims to rapidly decarbonize the U.S. economy and remake the country's energy landscape, while providing well-paying jobs for millions of Americans. The GND has its roots in historical environmental, labor, and social justice struggles, including Franklin D. Roosevelt's "New Deal" programs of the 1930s and '40s. This seminar will explore the promise and potentials of the GND through both a critical historical reading of FDR's original New Deal programs, and through techniques of projective futures and scenario-building. Students will use scenarios to develop inspiring and relevant proposals for aggressively tackling climate change through public infrastructure and public works. We will spend part of the course unpacking original New Deal regional roads and trails (iconic New Deal highways), regional dam and power networks (the TVA and PWA), electrical grid infrastructure (Rural Electrification Administration), and large-scale environmental conservation (the CCC). The seminar will also tackle the relationship between government programs and radical social change, and explore the role of design and the public imagination implicit in the Green New Deal. This course is open to all interested students.

ARCHITECTURE*****NEW COURSE*******ARCH 711-001: Topics in Arch Theory I: Architecture/Collective: Imagination, Resistance, Memory**

Sophie Hochhäusl

Monday, 6:30-9:30

In July 2019, Hashim Sarkis, Dean of the School of Architecture and Planning at MIT, announced the theme for the 17th International Architecture Biennial in Venice with the title "How will we live together?" Architecture, as it exists in the world, necessarily is bound up with ideas of how we live together. Yet, Sarkis points to a renewed need for speculative ideas about togetherness, which have enjoyed a long discursive history in the twentieth century architects. Indeed, artists, social theorist, and politicians have articulated the nuances between community, society, collectivity, and difference – or to borrow a term from architectural historian and theorist Anooradha Siddiqi "togetherness" – for more than a century. In this course we therefore focus on ideas of the "collective" in the history of architecture and how theoretical writing about collectivity has influenced architectural debates from the turn of the last century until today.

We will engage the themes of how architects imagine and build together, how they articulate collective forms of resistance as pedagogy and performance, and how they contribute to making public monuments and memory. The course will rely heavily on discussions of theoretical texts from Hannah Arendt and Maurice Halbwachs, to Paolo Freire, Fanon Frantz, Angela Davis, June Jordan, James Young, and Alaida Assmann. Throughout the seminar we will conduct research dedicated to groups of architects who collectively developed ideas on housing and the design of social institutions, pedagogy and public memory. Most of the practices we will analyze also practiced collectively. Some of them include, but are not exclusive to, the Regional Planning Association (USA), the Brigade May (Germany-Soviet Union), BBPR (Italy), Energoprojekt (Yugoslavia-Nigeria), AUCA (Chile), Beijing Jianzhu Sheji Shiwusuo (China). The seminar will meet weekly and all students are expected to participate in readings and discussions actively.

ARCH 711-002: Topics in Arch Theory I: Building Theories

Franca Trubiano

Friday, 9:00-12:00

Recent architectural projects have showcased unprecedented building technologies and inventions. The introduction of new materials, alternative energy sources, big data and the reorganization of global labor practices, have redefined the art of building. However, faced with these vast transformations in how we design and practice, architectural theory has been less than equipped to discuss, evaluate, and debate their impact.

Required is the ability to analyze, rationalize, and theorize their consequences; required is a theory of BUILDING. For decades, architectural theory has been remiss to recognize the contribution which building practices have made to how we ‘think’ about architecture. Redressing this condition is the goal of this seminar; dedicated to the critical examination of ideas fundamental to the art of building. In a text-based review of both significant contemporary projects and seminal architectural writings, this seminar outlines the first ideas of the nascent field that is Building Theories. Designs require their construction, and construction requires rationalization; and it is in this reciprocity that students are invited to elaborate a new theoretical field.

ARCH 711-003: Topics in Arch Theory I: Strange Symmetries: Towards a Symmetrical Architecture

David Salomon

Wednesday 9:00-12:00

Allegedly exorcised in the 20th century for its indifference to use, context and climate, it never really disappeared. Today, it is back with a vengeance. The diverse, if not divergent practices that use symmetry include: Reiser + Umemoto, MAD, Zaha Hadid, MOS, OMA, OFFICE, Foster, Pezo von Ellrichshausen, Dogma, David Ruy, Mark Foster Gage and Young + Ayata.

Why symmetry, why now? The seminar will look at the history of symmetry as an idea, its use in architecture, and its subsequent expansion into other intellectual arenas. It will then turn its attention to current debates within architectural discourse – namely, those around flat-ontology, Object Oriented Ontology, and global architectural history - and the sublimated presence of symmetry within them. Next, we will look at and compare historical and contemporary architectural projects with one another, using the presence of symmetry in them to help identify/establish cross-cultural and cross-temporal affinities and disjunctions between them. Finally, the ideas of Latour, DeLanda, Harman and others will be deployed to theorize the return of symmetry. In short, through the close examination of symmetrical architecture and ideas about symmetry we will ask if symmetry – with its exhibited capacity to cross borders without losing its identity – help architecture avoid having to make the false choice between autonomy and engagement?

ARCH 711-004: Topics in Arch Theory I: Modern Architecture in Japan – Culture, Place, Tectonics

Ariel Genadt

Thursday, 2:00-5:00

This seminar explores the diversity of forms and meanings that architecture took on in Japan since its industrialization in the 19th century. Through this lens, it poses wider questions on the capacity of construction, materials and their assembly to express and represent cultural, aesthetic, climatic and social concerns. Rather than an exhaustive survey, the course demonstrates salient topics in Japan’s recent architectural history, as a mirror of parallel practices in the world. It examines drawings, images, texts and films about architects whose work and words were emblematic of these topics, including: the role of technology in construction and cultural expression; tensions between tradition and creation; resistance, weakness and resilience in face of environmental forces; tectonic expression in relation to place; the concepts of dematerialization and abstraction in architectural expression.

*****NEW COURSE*****

ARCH 711-005: Topics in Arch Theory I: Approaches to Contemporary Theory

Joan Ockman

Tuesday, 3:00-6:00

Architectural theory is back. After falling out of favor for a couple decades, theory has returned to the forefront of architectural discourse, but in new, different, and interesting ways. In previous eras theory offered architects a doctrine, a set of justifications for their work, and a canon of essential texts and authors. Today the very idea of a canon, and indeed the disciplinary definition of architecture itself, is being challenged and expanded. Theory now functions more as a mode of thought, a platform for debate, and an array of intellectual and critical strategies. At the same time, after the profound

transformations that have taken place in the world over the last three decades—geopolitical, technological, environmental—the necessity for theory has never been greater. “Theory comes about when we are forced into a new self-consciousness of what we are doing. It is a symptom of the fact that we can no longer take those practices for granted,” Terry Eagleton has written. “On the contrary, those practices must now begin to take themselves as objects of their own inquiry.” This statement is the point of departure for a rigorous engagement with theory that approaches its architectural subject from a multiplicity of perspectives, including (among others) politics, ethics, experience, representation, and production. Working in reverse, and inspired by a recent series on the website e-flux Architecture, the class will collectively produce as a final project a syllabus and annotated bibliography for a seminar titled “Approaches to Contemporary Theory.” Enrollment limited to 15 students.

*****NEW COURSE*****

ARCH 711-006: Topics in Arch Theory I: The City and Its Architecture

Peter Trummer

Tuesday, 3:00-6:00

Please contact the department for a course description.

ARCH 719-001: Archigram and Its Legacy: London, A Technotopia

Annette Fierro

Wednesday, 9:00-12:00

Acknowledging the ubiquitous proliferation of "Hi-Tech" architecture in contemporary London, this research seminar examines the scope of technology as it emerges and re-emerges in the work of various architects currently dominating the city. This scope includes the last strains of post-war urbanism which spawned a legacy of radical architecture directly contributing to the Hi-Tech; a particular focus of the course will be the contributing and contrasting influence provided by the counter-cultural groups of the 60's- Archigram, Superstudio, the Metabolists and others. Using the premise of Archigram's idea of infrastructure, both literal and of event, the course will attempt to discover relational networks between works of the present day (Rogers, Foster, Grimshaw, etc.). As this work practices upon and within public space, an understanding of the contribution of technology to urban theatricality will evolve which is relevant to contemporary spheres of technological design practices. Students will be required to produce and present a term research paper.

ARCH 721-401: Designing Smart Objects for Play and Learning

Assaf Eshet

Tuesday, 3:00-6:00

Today's children enjoy a wide array of play experiences, with stories, learning, characters and games that exist as physical stand-alone objects or toys enhanced with electronics or software. In this course, students will explore the domain of play and learning in order to develop original proposals for new product experiences that are at once tangible, immersive and dynamic. They will conduct research into education and psychology while also gaining hands-on exposure to new product manifestations in a variety of forms, both physical and digital. Students will be challenged to work in teams to explore concepts, share research and build prototypes of their experiences in the form of static objects that may have accompanying electronic devices or software. Final design proposals will consider future distribution models for product experiences such as 3D printing, virtual reality and software- hardware integration. Instruction will be part seminar and part workshop, providing research guidance and encouraging connections will subject matter experts throughout the Penn campus.

ARCH 724-001: Technology in Design: Immersive Kinematics/Physical Computing: Body As Site

Simon Kim & Mark Yim

Wednesday, 9:00-12:00

The aim of this course is to understand the new medium of architecture within the format of a research seminar. The subject matter of new media is to be examined and placed in a disciplinary trajectory of building designed and construction technology that adapts to material and digital discoveries. We will also build prototype with the new media, and establish a disciplinary knowledge for ourselves. The seminar is interested in testing the architecture-machine relationship, moving

away from architecture that looks like machines into architecture that behaves like machines: An intelligence (based on the conceptual premise of a project and in the design of a system), as part of a process (related to the generative real of architecture) and as the object itself and its embedded intelligence.

ARCH 725-401: Design Thinking

Sarah Rottenberg

Thursday, 12:00-3:00

Creating new product concepts was once a specialized pursuit exclusively performed by design professionals in isolation from the rest of an organization. Today's products are developed in a holistic process involving a collaboration among many disciplines. Design thinking — incorporating processes, approaches and working methods from traditional designers' toolkits — has become a way of generating innovative ideas to challenging problems and refining those ideas. Rapid prototyping techniques, affordable and accessible prototyping platforms, and an iterative mindset have enabled people to more reliably translate those ideas into implementable solutions. In this course, students will be exposed to these practices and learn how to engage in a human-centered design process.

ARCH 731-001: Experiments in Structure

Mohamad Al Khayer

Tuesday, 9:00-12:00

This course studies the relationships between geometric space and those structural systems that amplify tension. Experiments using the hand (touch and force) in coordination with the eye (sight and geometry) will be done during the construction and observation of physical models. Verbal, mathematical and computer models are secondary to the reality of the physical model. However these models will be used to give dimension and document the experiments. Team reports will serve as interim and final examinations. In typology, masonry structures in compression (e.g., vault and dome) correlate with "Classical" space, and steel or reinforced concrete structures in flexure (e.g., frame, slab and column) with "Modernist" space. We seek the spatial correlates to tensile systems of both textiles (woven or braided fabrics where both warp and weft are tensile), and baskets (where the warp is tensile and the weft is compressive). In addition to the experiments, we will examine Le Ricolais' structural models held by the Architectural Archives.

ARCH 732-001: Technology Designated Elective: Daylighting

Jessica Zofchak

Tuesday, 6:00-9:00

This course aims to introduce fundamental daylighting concepts and tools to analyze daylighting design. The wide range of topics to be studied includes site planning, building envelope and shading optimization, passive solar design, daylight delivery methods, daylight analysis structure and results interpretation, and a brief daylighting and lighting design integration.

ARCH 732-002: Technology Designated Elective: Material and Structural Intelligence

Sameer Kumar

Friday, 9:00-12:00

The semester long project will involve a gradual development of architectural ideas that are intimately informed by and centered on knowledge of Structure and Materiality. Employing both physical and digital simulations, the students will synthesize knowledge acquired in previous courses in structures, materials, and construction methods to develop architectural solutions within a carefully selected set of determinants.

ARCH 732-003: Technology Designated Elective: Geometric Structural Design

Masoud Akbarzadeh

Thursday, 2:00-5:00

Geometric structural design provides a comprehensive introduction to novel geometric methods of structural design based on 2D and 3D graphical statics. The primary emphasis of the course will be on developing a general understanding of the relationship between structural forms in equilibrium and the geometric representation of their internal and external forces.

This link is the main apparatus for designing provocative structural forms using only geometric techniques rather than complicated algebraic/numerical methods. Moreover, special consideration will be given to materialization of the structural geometry and the proper fabrication techniques to construct the complex geometry of the structure.

Note that this course is based on ongoing research in the field of 3D graphical statics, and therefore provides students with the opportunity to directly contribute to the current research in geometric methods of structural design. Familiarity with a parametric software is required, and code-writing ability is an asset. Particular attention will be given to structural model making and careful structural drawings. The outcomes of the course will become a primary collection of Polyhedral Structures Laboratory. Also, a unique summer research fellowship will be available for highly motivated students to build a one-to-one scale structural prototype based on the forms developed in the class.

ARCH 732-004: Technology Designated Elective: Matter and Energy

Franca Trubiano

Thursday, 9:00-12:00

This seminar/workshop promotes architectural innovation in the field of construction technology. Matter + Energy are the two fields of enquiry which guide and structure the course's reading seminars and prototype workshops. Students will design and fabricate building related prototypes that productively respond to a well-documented and socially relevant environmental need. The creative and critical integration of Matter + Energy is the ambition of each prototype. Materials such as films, composites and plastic/polymers will be central to the investigation, as will the energy related topics of thermodynamics, light/heat studies and renewable energies. Invited design and building industry professionals will advise student teams and offer critical reviews of their process during the semester. Lastly, students will be introduced to performance design metrics used in evaluating the environmental impact of their material and energy choices, be they embodied energy, carbon emissions, or Life Cycle Assessments.

More specifically, the seminar is dedicated to the development of a body of knowledge aligned with socially relevant ecological design principles. Students are encouraged to design and prototype innovative solutions for housing the world's homeless. The physical constraints of the art of building are essential to the exercise when the construction of new technologies is positioned between the practice points of energy + matter; power and materials.

Given the world's energy resources are limited and fair acquisition is impossible given corporate and governmental power dynamics, the design of basic shelter for hundreds of millions of homeless must address this basic lack of fuel. Seeking inventive applications in renewable energy in the design of minimum existence housing is one goal of this seminar; the other, the innovative and intelligent application of materials to the same end. Students working in teams will develop their own Energy + Matter equation, actualizing a world of ideas and fabrication practices which give rise to socially relevant zero energy building prototypes.

ARCH 737-001: Semi-Fictitious Realms

Jeffrey Anderson

Thursday, 9:00-12:00

The pursuit of immersive digital experiences has long been a goal of the computing industry. Early wearable displays designed in the 1960s depicted simple three-dimensional graphics in ways that had never been seen before. Through trial and error, digital pioneers reframed the relationship between user and machine, and over the last five decades, have made strides that advanced both the input and output mechanisms we are so comfortable with today. As a field, architecture has been reliant on these advancements to design and document buildings, but these tools still leave the architect removed from the physicality of the design, with their work depicted as 2D lines or 3D planes alone.

This course will study the evolutionary advancements made that now allow us to fully inhabit digital worlds through Virtual Reality. Using the HTC Vive and the Unity video game engine, students will generate immersive, photo-realistic models of unbuilt architectural works and explore digital/physical interactivity. From the terraces of Paul Rudolph's Lower Manhattan Expressway to Boullée's Cenotaph for Newton, the goal of this course is to breathe new life into places and spaces that have, until this time, never been built or occupied.

ARCH 739-001: New Approaches to an Architecture of Health

Mikael Avery

Tuesday, 1:00-4:00

Health care is taking on a new role in our society - with a refocusing from episodic care for those who are ill or symptomatic to providing life-long care geared towards maintaining wellness. These changes are evident across numerous areas of design, from wearable technologies that track and analyze, to large scale building initiatives that aim to create healthier environments and improve lives through strategic planning initiatives.

A concrete, physical representation of this paradigm shift can be found within the hospital building itself and in the new manner in which hospitals are looking to serve their patients and care for their clinicians. Simultaneously both public and private spaces, hospitals are complex systems in which sickness, health, hospitality, technology, emergency, and community share space and compete for resource.

In order to frame our present day understanding of the role of architecture (and design) in fostering health for individuals and within communities, this seminar will begin with an exploration of the historical and contemporary perspectives on the role of the architect and built environment on health. (Parallels between design and our ever-changing understanding of the biological, social, and environmental causes of sickness and disease will also be explored.) During this conversation, students will read articles and study recently constructed projects in order to examine the ways in which the architects approached these topics through built form. Following from this foundation, students will craft arguments for a new approach to the individual, the community, health, and architecture through a written response and architecturally designed scenario that argues for their perspective on how architecture can and should shape the health of those who inhabit it.

ARCH 741-001: Architecture Design Innovation

Ali Rahim

Wednesday, 9:00-12:00

The mastery of techniques, whether in design, production or both, does not necessarily yield great architecture. As we all know, the most advanced techniques can still yield average designs. Architects are becoming increasingly adept producing complexity & integrating digital design and fabrication techniques into their design process - yet there are few truly elegant projects. Only certain projects that are sophisticated at the level of technique achieve elegance. This seminar explores some of the instances in which designers are able to move beyond technique, by commanding them to such a degree so as to achieve elegant aesthetics within the formal development of projects.

ARCH 743-001: Form and Algorithm

Ezio Blasetti

Monday, 9:00-12:00

The critical parameter will be to develop the potential beyond finite forms of explicit and parametric modeling towards non-linear algorithmic processes. We will seek novel patterns of organization, structure, and articulation as architectural expressions within the emergent properties of feedback loops and rule based systems. This seminar will accommodate both introductory and advanced levels. No previous scripting experience is necessary. It will consist of a series of introductory sessions, obligatory intensive workshops, lectures followed by suggested readings, and will gradually focus on individual projects. Students will be encouraged to investigate the limits of algorithmic design both theoretically and in practice through a scripting environment.

*****NEW COURSE*******ARCH 749-001: Indeterminate Delineations**

Maya Alam

Tuesday, 9:00-12:00

This representation and design seminar will focus on new media applications, its effects on our perception and understanding of space. We will focus on the history and application of contemporary imaging technologies through the lens of the point as a visualization and abstraction device.

Architecture has always been closely entangled with modes of vision. Devices ranging from Dürer's perspective machine to the photographic eye have strongly shaped the way we think and design the built environment of our cities: it is the technologies through which we see and experience the built environment that define the way we construct it. This class leverages the bi-product of scanning technologies - point clouds and image making - to explore inclusive modes of delineations: a visual sensibility to engage with the multi-faceted nature of the built environment.

Points play an important role in the history of visuality: from Impressionism and Pointillism as elements to investigate the mechanics of vision, to the post war period at the Berlin School of Gestalt Psychology as graphic elements to understand part to whole relationships. Aiming to continue this investigation, this class will focus on digital and physical points as anchors to tie modes of vision with modes of construction.

ARCH 751-001: Ecology, Technology, and Design

William Braham

Tuesday, 1:00-4:00

This course will examine the ecological nature of design at a range of scales, from the most intimate aspects of product design to the largest infrastructures, from the use of water in bathroom to the flow of traffic on the highway. It is a first principle of ecological design that everything is connected, and that activities at one scale can have quite different effects at other scales, so the immediate goal of the course will be to identify useful and characteristic modes of analyzing the systematic, ecological nature of design work, from the concept of the ecological footprint to market share. The course will also draw on the history and philosophy of technology to understand the particular intensity of contemporary society, which is now characterized by the powerful concept of the complex, self-regulating system. The system has become both the dominant mode of explanation and the first principle of design and organization.

ARCH 765-001: Project Management

Charles Capaldi

Friday, 9:00-12:00

ARCH 765 is an introduction to construction management, project management and various construction project delivery systems. In the study of construction delivery systems, we will examine the players, relationships and the advantages and disadvantages of different contractual and practical relationships, both on the construction site and at the tops of the various "paper piles". Exercises and lectures will focus on developing perspectives into the various roles, needs and expectations of the many parties involved in a construction project and the management skills and techniques which help to bring a project to a successful conclusion.

ARCH 768-402: Real Estate Development

Alan Feldman

Monday, 3:00-6:00

This course evaluates "ground-up" development as well as re-hab, re-development, and acquisition investments. We examine raw and developed land and the similarities and differences of traditional real estate product types including office, R & D, retail, warehouses, single family and multi-family residential, mixed use, and land as well as "specialty" uses like golf courses, assisted living, and fractional share ownership. Emphasis is on concise analysis and decision making. We discuss the

development process with topics including market analysis, site acquisition, due diligence, zoning, entitlements, approvals, site planning, building design, construction, financing, leasing, and ongoing management and disposition. Special topics like workouts and running a development company are also discussed. Course lessons apply to all markets but the class discusses U.S. markets only. Throughout the course, we focus on risk management and leadership issues. Numerous guest lecturers who are leaders in the real estate industry participate in the learning process. Format: predominately case analysis and discussion, some lectures, project visits.

ARCH 811-001: Theories of Architecture: Architecture's Cultural Performance: The Façade

David Leatherbarrow

Tuesday, 2:00-5:00

This course will reconsider these alternatives and ask again about the interrelationships between topics of design that seem to be categorically distinct: the project's functionality and its style, its provision of settings that allow the enactment of practical purposes and its contribution to the image and appearance of our landscapes and cities. Our concentration will be at once historical and thematic. We will study and reconsider buildings from the twentieth century and we will ask questions that resonate through the past several decades into the present, questions about the building (its materials, construction, and figuration) as well as the process of design (description, projection, and discovery). Throughout the course we will return to the building's most visible and articulate surface: the façade.

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FINE ARTS

FNAR 506: Design 21

Section 401- Orkan Telhan

Tuesdays, 1:30pm - 4:30pm

Last century, the digital revolution transformed every aspect of our lives. It shaped every design discipline and defined the ways we imagine and fabricate anything from images to everyday products to clothing, cars, buildings and megacities. Today, design is going through other technical and conceptual revolutions. We design with biotechnologies, fall in love in Virtual Reality with AI bots, rent our cognitive labor through cryptocurrencies. Our creative capabilities, on the other hand, are bounded by a polluted, over- crowded, and resource-constrained planet that is suffering major income and educational inequality. Design After the Digital interrogates the role of design for this century. The seminar surveys the conceptual and technical developments in the past decade to develop an interdisciplinary understanding of design, science and technology. We will study how new design and fabrication methods shape what eat, what we wear, how we form opinions and express ourselves. The goal will be to develop new literacies of design that will help us acclimate better to the realities of the century as creative and critical citizens who can shape its products and values.

FNAR 523: Drawing I

Section 401 – Kaitlin Pomerantz – Monday and Wednesday: 5:00pm – 8:00pm

Section 402 – Mathew Neff – Monday and Wednesday: 2:00pm-5:00pm

Section 403 – Staff – Monday and Wednesday: 10:00am – 1:00pm

Section 404 – Erlin Geffrard – Tuesday and Thursday: 1:30pm – 4:30pm

Section 405 – Alexis Granwell – Tuesday and Thursday: 5:00pm – 8:00pm

This course is designed to develop visual awareness and perceptual acuity through the process of drawing. Students learn to sharpen perceptual skills through observational drawing, and to explore the expressive potential of drawing. A variety of problems and media will be presented in order to familiarize students with various methods of working and ways of communicating ideas visually. Subject matter will include object study, still life, interior and exterior space, self-portrait and the figure. Different techniques and materials (charcoal, graphite, ink, collage) are explored in order to understand the relationship between means, material and concept. Critical thinking skills are developed through frequent class critiques and through the presentation of and research into historical and contemporary precedent in drawing. If you need assistance registering for a closed section, please email the department at fnarug@design.upenn.edu

FNAR 524: Drawing Investigations

Ivanco Talevski

Monday and Wednesday, 10:00am – 1:00pm

Drawing is a fundamental means of visualization and a hub for thinking, constructing, and engaging in a wide variety of creative activities and problem solving. This studio class explores drawing in both its traditional and contemporary forms. The projects are designed to help students in all disciplines find ways express and clarify their ideas through the process of drawing. The semester begins with the refinement of perceptual skills acquired in Drawing I, while encouraging experimentation through the introduction of color, abstract agendas, conceptual problem solving, and collaborative exercises, as well as new materials, techniques and large format drawings. Particular attention is given to ways to conduct visual research in the development of personal imagery. Assignments are thematic or conceptually based with ample opportunity for individual approaches to media, subject, scale and process. The goal is to strengthen facility, develop clarity in intent and expand expression. Attention is paid to the development of perceptual sensitivity, methods of image construction, and the processes of synthesis and transformation in order to communicate ideas through visual means. Recommended for students in all areas.

FNAR 531: Painting Practices

Section 401 – Anthony Bowers – Monday and Wednesday: 5:00pm – 8:00pm

Section 402 – Anthony Bowers – Tuesday and Thursday: 9:00am – 12:00pm

Painting practices is an introduction to the methods and materials of oil painting. This course begins with an investigation of color and color relationships. The beginning of the semester will cover technical issues and develop the student's ability to create a convincing sense of form in space using mass, color, light and composition. The majority of work is from direct observation including object study, still life, landscape, interior and exterior space and the self-portrait. Class problems advance sequentially with attention paid to perceptual clarity, the selection and development of imagery, the process of synthesis and translation, color, structure and composition, content and personal expression. Students will become familiar with contemporary and art historical precedent in order to familiarize them with the history of visual ideas and find appropriate solutions to their painting problems.

FNAR 532 & 534: Painting Studio

Jackie Tileston

Monday and Wednesday, 2:00pm – 5:00pm

Painting Studio presents an ongoing exploration of the techniques, problems and poetics of painting, the nuances of the painting language, and the development of a personal direction. A wide variety of problems will address such issues as color, composition, and the development of imagery, process, and content. Students are expected to improve in technical handling of paints and move towards developing personal modes of seeing, interpreting, and thinking for themselves. This course introduces different topics, strategies and individual challenges each semester, so it may be repeated with advanced course numbers.

FNAR 536: Digital Figure Modeling

Scott White

Tuesday and Thursday, 6:00pm – 9:00pm

This course introduces methods of modeling, texturing, and rendering human and animal figures. Students will study anatomical bone and muscle structures, and then employ this knowledge as they develop polygonal models for real-time 3D simulations or gaming environments, high-resolution renderings, and rapid prototyping.

FNAR 538: Open Book, Benjamin Franklin Seminar

Sharka Hyland

Monday, 5:00pm – 8:00pm

"Open Book" will focus on visual communication of information. It will address two methods of inquiry and the corresponding means of visual representation: the objective, well-structured research of facts and images, and the creative process of their subjective evaluation and restatement. Students will propose a topic based on their area of interest and engage in a focused, semester-long exploration, which they will present in the form of a designed and printed book.

FNAR 540: Mystics & Visionaries: Arts and Other Ways of Knowing

Jackie Tileston

Tuesday, 1:30pm – 4:30pm

As a pioneer of abstraction in the early 1900's, Hilma Af Klint channeled a complex and highly original body of abstract symbolic work in secrecy. Using the upcoming Hilma Af Klint exhibition at the Guggenheim as a focus and departure point, this course will explore the ways in which artists have accessed alternative ways of seeing, knowing, and embodying non-visible realities as a source for their work. Accessing spiritual realms has been the subject of early European Modernisms investigations into Theosophy and Anthroposophy, as well as the primary intention of Tibetan Thangkas and Indian Tantra paintings. Postmodernism's crisis of belief and skepticism generated a cultural situation wherein the subject of spirituality was marginalized, ridiculed as anti-intellectual, and in disgrace. The Hilma Af Klint exhibition and surge of interest in her work signifies a new moment, where questions about consciousness and the nature of reality are being addressed with renewed vigor. How do we create space in a technology driven world for experiences that attempt to align the viewer/maker with the contemplative realm, heightened states of consciousness, or transcendence? We will examine a wide field of artists in an attempt to understand the possibilities of the "spiritual" in art and contemporary culture. This seminar will engage in readings, lectures, discussions, projects, and field trips. This course is appropriate for both grad and undergrad, art majors and non-majors alike.

FNAR 541: Hand-Drawn Computer Animation

Joshua Mosley

Tuesday and Thursday, 9:00am – 12:00pm

Using software tools designed for hand-drawn animation, students will develop animation skills applicable to all forms of animation. In this course students will learn to draw with a sense of urgency and purpose as they represent motion and drama in a series of frames. Through careful study of natural movements, precedents in the history of animation, and through the completion of a series of animation projects students will develop strategies for representing naturalistic movement, inventing meaningful transformations of form, and storytelling.

FNAR 545: Sculpture Practices

Section 401 – Staff - Tuesday and Thursday: 9:00am – 12:00pm

Section 402 – Staff – Tuesday and Thursday: 1:30pm – 4:30pm

As an introduction to traditional and contemporary three-dimensional practice, this course is concerned with the concepts and methodologies surrounding three-dimensional art making in our time. Students experiment with a variety of modes of production, and develop some of the fundamental techniques used in sculpture. In addition to these investigations, assignments relative to the history and social impact of these practices are reinforced through readings and group discussion.

Processes covered include use of the Fab Lab, wood construction, clay, paper, mixed media, and more. If you need assistance registering for a closed section, please email the department at fnarug@design.upenn.edu

FNAR 550: Intro to Printmaking

Joshua Zerangue

Monday and Wednesday, 5:00pm – 8:00pm

The course offers an introduction to several forms of printmaking including: intaglio, screen printing, relief, and monoprinting. Through in-class demonstrations students are introduced to various approaches to making and printing in each medium. The course enhances a student's capacity for developing images through two-dimensional design and conceptual processes. Technical and conceptual skills are developed through discussions and critiques. If you need assistance registering for a closed section, please email the department at fnarug@design.upenn.edu.

FNAR 566: Graphic Design with Creative Technologies

Section 401 – Staff – Tuesday: 1:00pm – 5:00pm

Section 402 – Mark Owens – Thursday: 4:30pm – 8:30pm

The aim of this course is to introduce students creative ways to use color, typography, and layout across new materials and media, ranging from print to physical objects. Students will explore visual design through a set of assignments and projects that are geared towards exploring the role of design in visual arts, interaction design, media design and architecture. The course introduces a number of design concepts such as content organization, navigation, interaction and data-driven design and show ways to develop new design metaphors, presentation techniques, and imagery using old and new technologies. Course is structured as a combination of lectures and hands on workshops where students will have the chance to work both individually and collaboratively to realize their projects.

FNAR 567: Computer Animation

Joshua Mosley

Tuesday and Thursday, 1:30pm – 4:30pm

Through a series of studio projects this course introduces techniques of 2D and 3D computer animation. Emphasis is placed on time-based design and storytelling through animation performance and montage. Students will develop new sensitivities to movement, composition, cinematography, editing, sound, color and lighting.

FNAR 568: Integrative Design Studio

Orkan Telhan and Karen Hogan

Monday and Wednesday, 1:00pm- 4:00pm

This course is a research-based design studio that introduces new materials, fabrication, and prototyping techniques to develop a series of design proposals in response to the theme: Biological Design. The studio introduces life sciences and biotechnologies to designers, artists, and non-specialists to develop creative and critical propositions that address the social, cultural, and environmental needs of the 21st century. The course will be a pilot study of the first biodesign challenge organized by CUT/PASTE/GROW. The final projects will be submitted to a competition and the winning entry will be featured at Biofabricate in Summer 2019.

FNAR 569: Typography

Sharka Hyland

Monday and Wednesday, 10:00am- 1:00pm

The study and practice of typography spans the history of individual letterforms through the typesetting of full texts. It is a complete immersion into type as an integral part of visual communication. Typesetting conventions and variables including

legibility, readability, texture, color and hierarchy will be stressed, as well as a form for organizing information and expressing visual ideas. Studio work will include collecting and analyzing type, designing an original typeface, researching type history and experimenting with typographic forms.

FNAR 571: Introduction to Photography

Section 401 – Anna Neighbor – Monday: 10:00am – 1:00pm

Section 402 – Anna Neighbor – Monday: 2:00pm – 5:00pm

Section 403 – Theo Mullen III – Thursday: 10:00am – 1:00pm

Section 404 – Theo Mullen III – Tuesday: 5:00pm – 8:00pm

This course is an introduction to the basic processes and techniques of black & white photography. Students will learn how to expose and process 35mm film, SLR camera operation, darkroom procedures & printing, basic lighting and controlled applications. It begins with an emphasis on understanding and mastering technical procedures and evolves into an investigation of the creative and expressive possibilities of making images. This is a project-based course, where students will begin to develop their personal vision, their understanding of aesthetic issues and photographic history. Assignments, ideas and important examples of contemporary art will be presented via a series of slide lectures, critiques and discussion. No previous experience necessary. 35mm SLR cameras will be available throughout the semester for reservation and checkout from the photography equipment room. If you need assistance registering for a closed section, please email the department at fnarug@design.upenn.edu

FNAR 580: Figure Drawing

Jotham Malavé Maldonado

Tuesday and Thursday, 9:00am – 12:00pm

Students work directly from the nude model and focus on its articulation through an understanding of anatomical structure and function. Students will investigate a broad variety of drawing techniques and materials. The model will be used as the sole element in a composition and as a contextualized element.

FNAR 591: The Body and Photography

Gabe Martinez

Wednesday, 5:00pm – 8:00pm

The last few decades have introduced dramatic changes in the way we interact with each other, the way we communicate, the way we date, watch porn, etc. Ethical concerns have arisen with scientific advances such as stem cell research, fertility drugs, Botox, cloning and erectile dysfunction. This studio course will investigate the myriad ways in which the corporeal is addressed and manipulated in contemporary art, science, religion, pop culture and media. Students will develop photographic projects related to updated questions concerning gender, sexuality and social issues. Lectures, readings and class discussion will focus and inform their individual work.

FNAR 615: Across Forms: Art and Writing

Sharon Hayes and Rachel Zolf

Wednesday, 2:00pm – 5:00pm

What if a poem spoke from inside a photograph? What if a sculpture unfurled a political manifesto? What if a story wasn't just like a dance, but was a dance-or a key component of a video, drawing, performance, or painting? In this course, artists and writers will develop new works that integrate the forms, materials, and concerns of both art and writing. Many artists employ writing in their practices, but may not look at the texts they create as writing. And many writers have practices that go beyond the page and deserve attention as art. This course will employ critique and workshop, pedagogic methodologies from art and writing respectively, to support and interrogate cross-pollination between writing and art practices. Additionally, the course will examine a field of artists and writers who are working with intersections between art and writing to create dynamic new ways of seeing, reading, and experiencing.

FNAR 620: Producing Ephemera: Letterpress, Risograph, Inkjet and Xerox

Kayla Romberger

Monday and Wednesday, 10:00am – 1:00pm

This studio course introduces students to the world of printmaking and circulation through techniques in letterpress and Risograph (a high-speed digital printing system developed in Japan in the 1980s), in addition to Xerox, laser, inkjet, and off-set printing, focusing particularly on the format of prints, artists' ephemera, and the role of ephemera in understanding culture. Students will create their own broadsides, flyers, announcement cards, and independent publications throughout the course, exploring ways in which artists, designers, musicians, and activists make or have made use of the print to disseminate information; initiate happenings; advertise events; or format change. Students will learn about some of the most significant producers working within this realm - from Conceptualists to punk bands - and develop skills in page layout, typography, and design; mechanized and hand-pulled press operations; and digital to analog pre-press and post-print production methods. This course is designed for highly motivated students and requires out-of-class time commitment. However, no prior coursework is required. Students from all levels and backgrounds are encouraged to register. The course employs combined collaborative / self-directed approaches to learning to enhance students' understandings of ways in which print media and multiples serve as vital conduits for disseminating ideas involving visual art, popular culture, literature, politics, performance and many other topics students will wish to explore.

FNAR 622: Big Pictures: Mural Arts in Philadelphia

Jane Golden

Monday and Wednesday, 2:00pm – 5:00pm

The history and practice of the contemporary mural movement couples step by step analysis of the process of designing with painting a mural. In addition students will learn to see mural art as a tool for social change. This course combines theory with practice. Students will design and paint a large outdoor mural in West Philadelphia in collaboration with Philadelphia high school students and community groups. The class is co-taught by Jane Golden, director of the Mural Arts Program in Philadelphia, and Shira Walinsky, a mural arts painter and founder of Southeast by Southeast project, a community center for Burmese refugees in South Philadelphia.

FNAR 634: Art of the Web: Interactive Concepts for Art and Design

Sebastien Derenoncourt

Monday and Wednesday, 6:00pm – 9:00pm

Art of the Web: Interactive concepts for art and design is a first step in learning how to create, analyze and discuss interactive content, as a visual creator. It is an exploration of the culture of the internet, the ideas behind its quirks, the dreams and freedoms it encapsulates, and the creative power it gives to us. Students will be assigned projects that will challenge their current understanding of the web, and the ways it shapes human connectivity and interaction. Upon completion of this course, students will possess a working knowledge how to organize and design websites and learn to critique web-content including navigation, UX design and information architecture. The course will require analytical and conceptual skills and foster creative thinking.

FNAR 635: 3-D Computer Modeling

Scott White

Section 401 - Monday and Wednesday, 10:00am – 1:00pm

Section 402 - Monday and Wednesday, 3:00pm – 6:00pm

Students will develop a comprehensive knowledge of how virtual worlds are constructed using contemporary computer graphics technique with a fine arts perspective. The course will offer the opportunity to explore the construction, texturing, and rendering of forms, environments, and mechanisms while conforming to modeling specifications required for animation, real-time simulations or gaming environments, and rapid prototyping.

FNAR 636: Art, Design, and Digital Culture

Section 401 – Jacob Rivkin – Monday and Wednesday: 10:00am – 1:00pm

Section 402 – Jacob Rivkin – Monday and Wednesday: 2:00pm – 5:00pm

Section 403 – Christopher Lawrence – Monday and Wednesday: 5:00pm – 8:00pm

Section 404 – Avery Lawrence – Tuesday and Thursday: 9:00am – 12:00pm

Section 405 – David Comberg – Tuesday and Thursday: 1:30pm – 4:30pm

Section 406 – Christopher Lawrence – Tuesday and Thursday: 5:00pm – 8:00pm

This course is an introduction to the fundamental perception, representation, aesthetics, and design that shape today's visual culture. It addresses the way artists and designers create images; design with analog and digital tools; communicate, exchange, and express meaning over broad range of media; and find their voices within the fabric of contemporary art, design, and visual culture. Emphasis is placed on building an extended form of visual literacy by studying and making images using a variety of representation techniques; learning to organize and structure two-dimensional and three dimensional space, and designing with time-based and procedural media. Students learn to develop an individual style of idea-generation, experimentation, iteration, and critique as part of their creative and critical responses to visual culture. If you need assistance registering for a closed section, please email the department at fnarug@design.upenn.edu

FNAR 640: Digital Photography

Section 401 – Sarah Stolfa – Monday: 10:00am – 1:00pm

Section 402 – Demetrius Oliver – Monday: 2:00pm – 5:00pm

Section 403 – Demetrius Oliver – Monday: 5:00pm – 8:00pm

Section 404 – Gabriel Martinez – Tuesday: 10:00am – 1:00pm

Section 405 – Gabriel Martinez – Tuesday: 2:00pm – 5:00pm

Section 406 – Karen Rodewald – Tuesday: 5:00pm – 8:00pm

Section 407 – Karen Rodewald – Wednesday: 10:00am – 1:00pm

Section 408 – Jamie Diamond – Wednesday: 2:00pm – 5:00pm

Section 409 – Heather Phillips – Thursday: 5:00pm – 8:00pm

Section 410 – James Phillips – Friday: 5:00pm – 8:00pm

This class offers an in-depth technical and conceptual foundation in digital imagery and the opportunity to explore the creative, expressive possibilities of photography. Students will become proficient with the basic use of the camera, techniques of digital capture, color management and color correction. They will also develop competency in scanning, retouching, printing and a variety of manipulation techniques in Photoshop. Through weekly lectures and critiques, students will become familiar with some of the most critical issues of representation, consider examples from photo history, analyze the impact of new technologies and social media. With an emphasis on structured shooting assignments, students are encouraged to experiment, expand their visual vocabulary while refining their technical skills. No previous experience is necessary. Although it is beneficial for students to have their own Digital SLR camera, registered students may reserve and checkout Digital SLR cameras and other high-end equipment from the department. If you need assistance registering for a closed section, please email the department at fnarug@design.upenn.edu

FNAR 642: Digital Photography II

Section 401 – Brent Wahl – Thursday: 2:00pm – 5:00pm

Section 402 – Jamie Diamond – Wednesday: 5:00pm – 8:00pm

In this course students will continue to develop conceptual, technical, aesthetic and formal strategies in digital photography, expanding their artistic process while refining their critical approach to researched subject matter. The class will be driven initially by a series of assignments formulated to further expose students to broad possibilities related to the medium and then they will be guided towards the evolution of a personalized body of work that is culturally, theoretically and historically informed. We will be examining key issues surrounding the digital image in contemporary society, led through a combination of class lectures, readings, group discussions, film screenings, gallery visits and class critiques. Students will further their knowledge of image control and manipulation, retouching and collage, advanced color management; become

familiar with high-end camera and lighting equipment and develop professional printing skills. In addition to learning these advanced imaging practices, this course will also emphasize an investigation of critical thought surrounding contemporary visual culture and the role of digital media in the creation of art.

FNAR 648: Counter the Land

Brent Wahl

Friday, 10:00am – 2:00pm

Starting with the representation of landscape in painting in the early 1800s, the course will then move through Pictorialism and the Modernist movement in photography. Revisiting the later half of the 20th century, we will begin to consider the shifting practices of landscape and the ways it has been photographically depicted up to the present. Collaborating with the Brandywine River Museum of Art in Chadds Ford, students will begin their photographic exploration with the work of Andrea Wyeth and the landscape of the Brandywine Valley. As we consider Wyeth, the images of James Welling will also be introduced. Credited for pioneering new forms of representation in photography in the 1970s, Welling also revisited the work of Wyeth from 2010-2015, and committed to a fresh (and challenging) look at tradition. Working with imagery and text, this class will also touch on conceptual art, the New Topographics, and postmodernism. Through these various concentrations, students will consider and counter the traditions that they are already familiar with, while creating work based on issues of the landscape today. Questions about meaning, politics, social critique, land rights, technology and methods of presentation will be encouraged and explored throughout the course.

FNAR 661: Video I

Section 401 – Emory Van Cleve – Monday and Wednesday: 10:00am – 1:00pm

Section 402 – Sosensa Solomon – Monday and Wednesday: 2:00pm – 5:00pm

Section 403 – Sosena Solomon - Monday and Wednesday: 5:00pm – 8:00pm

Section 404 – Emory Van Cleve – Tuesday and Thursday: 9:00am – 12:00pm

Section 405 – James Howzell – Tuesday and Thursday: 5:00pm – 8:00pm

In this studio based course, students are introduced to video production and postproduction as well as to selected historical and theoretical texts addressing the medium of video. Students will be taught basic camera operation, sound recording and lighting, as well as basic video and sound editing and exporting using various screening and installation formats. In addition to a range of short assignment based exercises, students will be expected to complete three short projects over the course of the semester. Critiques of these projects are crucial to the course as students are expected to speak at length about the formal, technical, critical and historical dimensions of their works. Weekly readings in philosophy, critical theory, artist statements and literature are assigned. The course will also include weekly screenings of films and videos, introducing students to the history of video art as well as to other contemporary practices. If you need assistance registering for a closed section, please email the department at fnarug@design.upenn.edu

FNAR 663: Documentary Video

Michael Crane

Wednesday, 2:00pm – 5:00pm

Documentary Video is an intensive production course involving the exploration of concepts, techniques, concerns, and aesthetics of the short form documentary. Building on camera, sound, and editing skills acquired in Video I, students will produce a portfolio of short videos and one longer project over the course of the semester using advanced level camera and sound equipment. One short presentation on a genre, technique, maker, or contemporary concern selected by the student is required.

FNAR 670: Advanced Graphic Design

David Comberg

Tuesday and Thursday, 9:00 – 12:00pm

This course will explore advanced commercial, public and personal forms of visual communication. Emphasis will be placed on creative problem solving with consideration for audience. Discussion of design history, current ideology and future design applications will inform individual student projects. Work generated in this studio can be used to build a portfolio.

CENTER FOR ENERGY POLICY**ENMG 502 001: Introduction to Energy Policy**

Anna Mikulska, William Hederman

Monday, 2:00-4:50pm

This course provides an advanced introduction to the design and delivery of energy policy at various levels of government in the U.S. and elsewhere. Energy—especially in the context of economic development and environmental sustainability—presents a career-defining challenge to many disciplines and professions. This course, therefore, is intended to provide an organizing foundation for courses across the schools of Law, Wharton, Design, SAS, and SEAS. The first half of the course will offer readings and lectures on systems theory, the energy system, the policy process, design thinking, policy design, decision analysis, and emerging issues. The second half of the course will use this foundation to explore a set of timely energy policy issues using readings and student presentations. Issues will include: disruption of legacy business models in energy markets, carbon budgets and tax and trade policies, compliance options under EPA's Clean Power Plan, energy efficiency and rebound, grid reliability and investment, emerging technologies such as energy storage, stranded assets and corporate sustainability, and others. Students will write two short papers in the first half of class, give a presentation in the second half, and write a research paper on an energy policy issue as a final project.

DEPARTMENTAL CONTACT INFORMATION:

- Architecture: arch@design.upenn.edu
- City Planning: roslynne@design.upenn.edu
- Fine Arts: fnarug@design.upenn.edu or mfa@design.upenn.edu
- Historic Preservation: amab@design.upenn.edu
- Landscape Architecture: crocetto@design.upenn.edu
- Kleinman Center for Energy Policy: ccolijn@design.upenn.edu

DETAILED INFORMATION ON REGISTRATION IS AVAILABLE ONLINE AT: [COURSES AND REGISTRATION](#)

QUESTIONS/CONCERNS REGARDING COURSE REGISTRATION: DES-STUDENTSERVICES@DESIGN.UPENN.EDU