

SCIARC

2017 – 2018
Course Catalog

Courses & Degree Requirements

UNDERGRADUATE DEGREE (B.ARCH)
5 YEAR (10 TERM) PROGRAM

Professional Bachelor of Architecture (B.Arch) program, accredited by the National Architectural Accrediting Board (NAAB).

Tom Wiscombe
Undergraduate Program Chair

SCI-Arc’s Bachelor of Architecture (B.Arch) Program is a 5-year professional degree, accredited by NAAB (the National Architectural Accrediting Board), focusing on both design excellence and intellectual breadth through a liberal arts based education.

The design culture of the B.Arch Program is focused both on the discipline of architecture, in terms of its history, theory, techniques, and on the practice of architecture, in terms of building technology, innovative means of construction, and professional practice. The core of the program is the design studio, where students build visual literacy, learn design skills, test ideas, and receive continuous, personal feedback on their work from studio faculty. Our studio faculty is primarily made up of practicing architects, which allows students a window into the lives of architects, as well as provides options for pursuing professional internships and employment outside the school. Students build, over four years of core design studio, a robust set of techniques and sensibilities for making and appreciating architecture. In their fifth year, students produce a thesis project, constituted by both a position in relation to contemporary architectural discourse and a highly developed building design project.

The four parallel paths of the B.Arch Program feed design studio culture: the Liberal Arts, Architectural History+Theory, Visual Studies, and Applied Studies. Liberal Arts coursework includes art history and theory, film history and theory, contemporary science and technology, history of civilization, philosophy, rhetoric and debate, and a range of other subjects. These are taught as independent forms of cultural knowledge that can disrupt conventional ways of thinking about architecture, space, and cities. Included in this curriculum is an ongoing series of masterclasses taught by international figures in their areas of expertise, engaging students by articulating their particular worldviews. Architectural History+Theory teaches students how architecture exists simultaneously as a form of knowledge, a set of building objects, and a unique discourse that continuously informs the work of contemporary architects. Visual Studies introduces students to new ways of seeing the world, and the importance of representation in the production of architectural ideas. Applied Studies focuses on cutting-edge methods of building design, documentation, and delivery, emphasizing the importance of linking aesthetic sensibilities to contemporary building technologies. This includes coursework on advanced building materials, sustainable systems, and new forms of industrial production for the 21st century.

Ultimately, SCI-Arc’s B.Arch Program produces individuals who are savvy, broad-thinking, and groomed to become leaders of their profession. They emerge with sophisticated portfolios of work that make them highly competitive in the global architectural marketplace. Graduates are poised to establish their own offices and become licensed professionals, enter top international architectural offices, or continue on to higher education in the world’s most competitive graduate programs.

Course structure

I. Foundation program

First term — 1A	Second term — 1B
DS1010 — 6 units Objects: Mass and Interiority I	DS1011 — 6 units Objects: Mass and Interiority II Prerequisite: DS1010
LA8010 — 3 units Design Cultures	HT2012 — 3 units History of Architecture and Urbanism I
LA8011 — 3 units Forms of Writing	LA8014 — 3 units Art History I
LA8012 — 3 units Film I	LA8015 — 3 units New Models of Nature and Biology
LA8013 — 3 units History of the Universe and Science	VS4011 — 3 units Visual Studies I

Students who fall behind their studio level by three or more required courses will be required to enroll in seminars only during the subsequent term.

B.Arch students must earn an additional one (1) unit of elective credit at any time during their curriculum through participation in masterclasses, workshops, gallery installations, or community outreach programs.

Third term — 2A	Fourth term — 2B
DS1020 — 6 units Objects to World: Ground and Apertures I Prerequisite: DS1011	DS1021 — 6 units Objects to World: Ground and Apertures II Prerequisite: DS1020
HT2024 — 3 units History of Architecture and Urbanism II Prerequisite: HT2012	HT2025 — 3 units History of Architecture and Urbanism III Prerequisite: HT2024
LA8016 — 3 units Art History II Prerequisite: LA8014	LA8017 — 3 units Philosophy I
AS3021 — 3 units Structures I	AS3030 — 3 units Structures II Prerequisite: AS3021
VS4020 — 3 units Visual Studies II Prerequisite: VS4011	VS4021 — 3 units Visual Studies III Prerequisite: VS4020

Students are required to submit a portfolio at the completion of the 2B studio prior to advancing into the fifth term.

II. Core program

Fifth term — 3A	Sixth term — 3B
DS1030 — 6 units AMIGAA: Articulation and Tectonics I Prerequisite: DS1021 and 2B Gateway Portfolio	DS1031 — 6 units AMIGAA: Articulation and Tectonics II Prerequisite: DS1030
HT2030 — 3 units Architectural Theory Prerequisite: HT2121	LA8019 — 3 units Film II Prerequisite: LA8012
LA8018 — 3 units Philosophy II Prerequisite: LA8017	AS3020 — 3 units Environmental Systems I
VS4030 — 3 units Visual Studies IV Prerequisite: VS4021	Liberal Arts Elective — 3 units
AS3033 — 3 units Tectonics and Materiality	

III. Advanced studies

Seventh term — 4A	Eighth term — 4B
DS1040 — 6 units AMIGAA Positions Prerequisite: DS1031	Vertical studio— 6 units Prerequisite: DS1040
AS3031 — 3 units Environmental Systems II Prerequisite: AS3020	AS3041 — 3 units Advanced Construction and Project Delivery Prerequisite: AS3040
AS3040 — 3 units Design Development	LA8022 — 3 units Contemporary Civilization Prerequisite: LA8018
Liberal Arts Elective — 3 units	HT2035 — 3 units Rhetoric I: Contemporary Architectural Discourse Prerequisite: HT2030
	Elective or CPT* — 3 units

Students are required to submit a portfolio at completion of the Vertical (4B) studio before advancing into the ninth term.

Students are also required to complete all core courses prior to advancing to 5A term.

* Students may apply for CPT units beginning in their 4B semester. Only two 3 unit electives can be used for CPT. Students wishing to apply for CPT units must enroll with the Registrar and Academic Counselor’s Offices. Approval for coursework is made by the Director’s Office.

Ninth term — 5A	Tenth term — 5B
Vertical Studio — 6 units	DS1051 — 9 units Studio Thesis Prerequisite: HT2050 and Completion of all Core Studios
HT2050 — 3 units Thesis Project Research Prerequisite: Completion of all Core and Vertical Studios	Elective — 3 units or CPT
AS3050 — 3 units Professional Practice	Elective — 3 units or CPT
LA8023 — 3 units Rhetoric II: Positions in Contemporary Philosophy Prerequisite: HT2035	
Elective — 3 units or CPT	

Students are required to submit a Gateway Portfolio at completion of the (4B) studio before advancing into the ninth term.

All Liberal Arts requirements must be completed before entering the 5B Thesis semester.

GRADUATE DEGREE PROGRAMS

Elena Manferdini

Graduate Programs Chair

For over 40 years, SCI-Arc collaborative and immersive environment of students, theorists, and practitioners has been able to empower the next generation of architects. All the Graduate Programs are led by faculty engaged in worldwide architectural practices in fields ranging from design and engineering to visual and cultural studies. Its curriculum is continuously and dynamically updated in a focused learning environment that can exist only in an institution entirely devoted to architecture. At the same time the school promotes a critical cross-pollination from other fields of art and design and the curriculum is forged to promote synthesis of thinking, inquiry, and execution. A range of public symposia, lecture series, technology labs, seminars, workshops, publications, and special projects create a platform for debate, challenging conventional ways of learning in a classroom.

The graduate programs at SCI-Arc attract a diverse and international student body that after graduation assumes leadership roles in shaping the built environment. Because the school is committed to influencing the evolution of our global culture and is simultaneously grounded in the architectural reality of Los Angeles, each program provides a rigorous and unusually intimate education, able to cultivate and recognize experimentation and creative freedom.

SCI-Arc offers two professional Master of Architecture degrees, M.Arch 1 and M.Arch 2, both accredited by NAAB (National Architectural Accrediting Board).

M.Arch 1

3 Year (7 Term) Program

A three year (seven term) professional Master of Architecture (M.Arch) program is accredited by the National Architectural Accrediting Board (NAAB) and open to applicants who hold a bachelor's degree or equivalent in any field of study other than architecture. This program requires full-time attendance for the fall and spring terms of the first two years, and the fall, spring and summer terms of the final year.

Central to the program's philosophy is a firm commitment to architectural discipline and design excellence, achieved through a comprehensive course of study that provides students with a solid intellectual base and understanding of the history, theory, technology, and professional practice of architecture.

Starting with a four-semester core sequence, students develop a framework for the discipline, as well as a strong foundation for critical inquiry and experimentation. Alongside an international design faculty, renowned across a wide breadth

of fields, and a distinguished group of critics and theorists, students challenge conventional ways of learning and attain the knowledge to shape our contemporary environment.

Upon completion of the core sequence, students are encouraged to develop a personal point of view through applied research in advanced studios and seminars.

The M. Arch 1 program culminates with a design thesis that exemplifies SCI-Arc's mission to develop independent thinking and promote research and innovation. The depth and rigor of graduate thesis also serve as a transition from graduate school to professional practice.

Course structure

First term — 1GA	Second term — 1GB
DS1100 — 6 units Fundamental Design Studio I	DS1101 — 6 units Fundamental Design Studio II Prerequisite: DS1100
HT2100 — 3 units Introduction to Contemporary Architecture	HT2101 — 3 units History of Architecture and Urbanism I Prerequisite: HT2100
AS3100 — 3 units Materials and Tectonics	AS3101 — 3 units Structures I Prerequisite: AS3100
VS4100 — 3 units Visual Studies I	AS3121 — 3 units Environmental Systems I: Light, Air, and Sound
	VS4101 — 3 units Visual Studies II Prerequisite: VS4100

Students are required to submit a portfolio at the completion of the 1GB studio prior to advancing into the third term.

*Students may apply for CPT units after completing the 1GB semester. Only two 3 unit electives can be used for CPT. Students wishing to apply for CPT units must enroll with the Registrar and Academic Counselor’s Offices. Approval for course-work is made by the Director’s Office.

Third term — 2GA	Fourth term — 2GB
DS1120 studio — 6 units Comprehensive Design Studio Prerequisite: DS1101	DS1121 — 6 units Architecture and Urban Design Studio Prerequisite: DS1120
HT2120 — 3 units History of Architecture and Urbanism II Prerequisite: HT2101	HT2121 — 3 units History of Architecture and Urbanism III Prerequisite: HT2120
AS3120 — 3 units Structures II Prerequisite: AS3101	AS3122 — 4 units Design Development and Documentation Prerequisite: AS3123
AS3123 — 3 units Environmental Systems II: Sustainability and Complex Envelopes Prerequisite: AS3121	VS4121 — 3 units Visual Studies IV Prerequisite: VS4120
VS4120 — 3 units Visual Studies III Prerequisite: VS4101	

Students are required to complete all the above courses prior to advancing into the fifth term.

Fifth term — 3GA	Sixth term— 3GB
Vertical studio — 6 units AS3130 — 3 units Practice Environments: Contracts, Liabilities, and Business Models AS3140 — 3 units Advanced Project Delivery / Construction Documents HTXXXX — Contemporary Architectural Discourse Seminar Prerequisite: HT2121	Vertical studio — 6 units HT2410 — 3 units Thesis Research Elective — 3 units or CPT Elective — 3 units or CPT

Students are required to submit a portfolio at the completion of the 3GA studio prior to advancing into the thesis prep (3GB) term.

Students are required to complete all course requirements up to the sixth term (3GB) prior to advancing into the graduate thesis term.

Seventh Term— 4GA (summer)
DS1420 — 9 units Graduate Thesis Prerequisite: HT2410 Elective — 3 units or CPT Elective — 3 units or CPT s

M.Arch 2
2 Year (5 Term) Program

The Master of Architecture 2 is a two-year (five-term) professional program open to applicants with a minimum of a four-year degree in Architecture, or its equivalent abroad. This program requires attendance for the fall and spring terms of the first year, and the fall, spring and summer terms of the final year.

The curriculum is specifically designed to build upon the knowledge gained from undergraduate degrees in architecture. Shaped as a design research platform, SCI- Arc’s M.Arch 2 program advances contemporary experimentation and propels new formal explorations. The curriculum aims to expand the boundaries of conventional architectural practice, and offers students an alternative educational model that promotes close collaboration with a team of faculty and consultants at the top of the field.

During the first year, the program operates as a laboratory for emerging techniques and technologies. Students are exposed to the latest architectural theories and design methodologies and develop contemporary design languages within historical and contemporary contexts.

On completing the two-term core sequence, students select vertical studios and elective seminars that either continue the focus of their core studies or broaden the scope of their education.

Students complete their studies with a presentation and public exhibition of a thoroughly researched architectural thesis. Select thesis projects are featured for extended public display in the SCI-Arc Gallery.

Required Courses

The Academic Counselor reviews the transcripts of students entering the M.Arch 2 program to verify that they have completed courses comparable to the following core Applied Studies classes offered at SCI-Arc: AS3101: Structures I; AS3120: Structures II; and AS3121: Environmental Systems I: Light, Air and Sound. Students who have not passed these classes are required to do so. M.Arch 2 students who have passed a sequence of courses on structures during their undergraduate courses at other institutions, but have not been introduced to seismic issues, are required to take a course on that subject before the end of their second term at SCI-Arc. Incoming M.Arch 2 transcripts will also be evaluated for achievement in the NAAB requirements for Architectural Traditions.

Course structurez	
First term — 2GAX	Second term — 2GBX
DS1200 — 6 units Computational Design Studio I	DS1201 — 6 units Computational Prerequisite: DS1200
HT2200 — 3 units Theories of Contemporary Architecture I	HT2201 — 3 units Theories of Contemporary Architecture II Prerequisite: HT2200
AS3200 — 3 units Advanced Material and Tectonics	AS3201 — 3 units Advanced Building Systems Prerequisite: AS3200
VS4200 — 3 units Visual Studies I	AS3302 — 3 units Advanced Structural Systems Prerequisite: AS3200
	VS4201 — 3 units Visual Studies II Prerequisite: VS4200

Students are required to complete all 2GAX and 2GBX courses prior to advancing into the third term.

2GAX Students who do not meet NAAB SPC requirements for A.9- Historical Traditions and Global Culture will be required to take HT2101 | History of Architecture and Urbanism I.

Students are required to submit a portfolio at the completion of the 2GBX studio prior to advancing into the third term.

* Students may apply for CPT units after completing the 2GBX semester. Only two 3 unit electives can be used for CPT. Students wishing to apply for CPT units must enroll with the Registrar and Academic Counselor’s Offices. Approval for coursework is made by the Director’s Office.

Third term — 3GAX	Fourth term — 3GBX
Vertical studio — 6 units AS3222 — 3 units Design Development and Documentation Prerequisite: AS3201 and AS3302 Contemporary Architectural Discourse — 3 units Prerequisite: HT2201 Elective — 3 units or CPT	Vertical studio — 6 units HT2410 — 3 units Thesis Research AS3230 — 3 units Practice Environments: Contracts, Liabilities, and Business Models Elective — 3 units or CPT

Students are required to submit a portfolio at the completion of the 3GAX studio prior to advancing into the thesis prep term.

Students are required to complete all 3GAX and 3GBX courses prior to advancing into the graduate thesis term.

Fifth Term — 4GAX (summer)
DS1420 — 9 units Graduate Thesis Prerequisite: HT2410 Elective — 3 units or CPT Elective — 3 units or CPT

POST GRADUATE PROGRAMS

SCI-Arc EDGE, Center for Advanced Studies in Architecture
David Ruy
Postgraduate Programs Chair

SCI-Arc EDGE is a new platform for advanced studies in architecture. Its innovative postgraduate degree programs are designed to test the theoretical and practical limits of architectural innovation in order to launch new architectural careers for the twenty-first century. Each program identifies a distinct territory in the emerging milieus of the contemporary world and empowers students to become active stakeholders in the construction of the future.

The scope of what an architect can do is expanding like never before. Everything is potentially an architectural problem. This requires training. It requires research. It requires speculation. Today, architecture is simultaneously becoming more specialized in its expertise and more diverse in its applications. It requires programs of advanced study that can be more targeted, more focused, and more innovative. Given the complexities of the contemporary world and the intense demands being made on the abilities of architects to meet problems, these programs are carefully designed to develop advanced expertise that a general professional degree cannot address.

The curriculum is choreographed to promote unexpected conversations across the various areas of study represented by each program. Collaboration is an important principle of SCI-Arc EDGE. It is a platform for advanced students to share knowledge as they drill deep into their chosen areas of study. At SCI-Arc EDGE, new concepts and ways of working will emerge in the coming years that will change what we think architecture can do. Everything that we now consider to be canonical, or simply normal, was at one time a crazy idea.

Master of Science in Architectural Technologies

SCI-Arc EDGE, Architectural Technologies is a one-year (three term) postgraduate degree program leading to a Master of Science in Architectural Technologies.

After nearly three decades of radical innovations that have utterly transformed the way architecture is designed and built, the Architectural Technologies program aims to establish a new technological discourse for architecture. An open-ended platform for practical training and theoretical research, the Architectural Technologies program builds on SCI-Arc’s well-established international reputation for technological innovation in architectural design.

Technologies come and go, but the general problem of technology itself and what we do with it as architects remains a persistent problem. Students in the program are asked to master existing technologies as an entry point for completely rethinking them. Like at no other time in architectural history, the production of meaningful architectural effects demands sophisticated technological awareness.

Students acquire expertise in technologies such as robotic fabrication, computational and parametric methods of form generation, additive manufacturing, and machine vision, but more importantly, students are asked to maintain a speculative interest in those technologies that haven’t even been invented yet. In anticipation of future technologies that we haven’t yet seen or imagined, the program develops a robust conceptual and critical framework for understanding technology’s long-standing relationship to architecture in general. As Cedric Price asked back in 1966, “Technology is the answer, but what was the question?”

The program requires attendance in the fall, spring, and summer terms.

Course structure

First Term (fall)	Second Term (spring)	Third Term (summer)
DS1711 — 6 units Design Studio I	DS1712 — 6 units Design Studio II	DS1713 — 6 units Design Studio III
AS2711— 3 units Design Lab I	AS2712 — 3 units Design Lab II	AS2713— 3 units Design Lab III
HT2711 — 3 units Advanced Architectural Studies I	HT2712 — 3 units Advanced Architectural Studies II	Elective Seminar — 3 units
Elective Seminar — 3 units	Elective Seminar — 3 units	Elective Seminar — 3 units

Master of Arts in Fiction and Entertainment

SCI-Arc EDGE, Fiction and Entertainment is a one-year (three term) postgraduate degree program leading to a Master of Arts in Fiction and Entertainment.

For nearly one hundred years, Los Angeles has been the city where the most captivating forms of fiction and entertainment have been manufactured for the world. This will also be the city where the meaning of fiction and entertainment will transform and mutate in the next one hundred years. Though architects have flirted with fiction and entertainment industries in the past, the future may require a greater degree of commitment as the role of fiction and entertainment practices in the world becomes more complex and more embedded in our environments.

Fiction is an extraordinary shared language through which we exchange ideas and engage with the world. The importance and power of media in the production of culture should not be underestimated. In contemporary life, new worlds are designed and experienced in movies, ad campaigns, videogames, viral Internet videos, or search engines. Given the vast array of media potentially available to the architect, it is both critical and urgent for the architect to widen the scope of practice beyond just buildings alone. Why shouldn't the architect design the next Hollywood blockbuster? Or the next virtual reality environment? Or the next political campaign? In a world that is more mediated than ever before, what we think the world looks like is largely determined by fiction and entertainment practices.

This program is focused on building new forms of architectural practice allied with the worlds of film, fiction, animation, marketing, games, and documentary. Working with world-renowned collaborators from these disciplines and deeply embedded within the fiction and entertainment industries of Los Angeles, this program is designed to be a place where we can tell new stories about the alternative realities of the twenty-first century.

The program requires attendance in the fall, spring, and summer terms.

Course Structure

First Term (fall)	Second Term (spring)	Third Term (summer)
DS1800 — 6 units Design Studio I	DS1812 — 6 units Design Studio II	DS1813 — 6 units Design Studio III
VS4211— 3 units Design Lab I	VS4212 — 3 units Design Lab II	VS4213— 3 units Design Lab III
HT2711 — 3 units Advanced Architectural Studies I	HT2712 — 3 units Advanced Architectural Studies II	Elective Seminar — 3 units
Elective Seminar — 3 units	Elective Seminar — 3 units	Elective Seminar — 3 units

Master of Science in the Design of Cities

SCI-Arc EDGE, Design of Cities is a one-year (three term) postgraduate degree program leading to a Master of Science in the Design of Cities.

Urban design has been in the past an ambiguous practice caught between the bureaucratic and policy oriented practices of urban planning and the built scales of architecture’s design practices. Despite its ambiguous mission, how cities are to be designed remains the most important and most difficult challenge facing architecture. Most of the world’s population now lives in cities; we are witnessing an astonishing and unprecedented process of urbanization on a planetary scale. The sheer complexity of this massive movement has put into question the validity of traditional urban design concepts, and it is increasingly urgent for architects to think about how cities should be designed.

The Design of Cities program seeks to clarify the ambiguous mission of urban design by foregrounding design as the primary area of focus. Rather than surrendering design to being nothing more than an accidental byproduct of planning policies and capital investment instruments, this program makes a commitment to the premise that new constituencies and economies can also emerge from innovative design concepts. Against the conventional wisdom that cities are hopelessly complex informal networks beyond the reach of any design model, this program fundamentally believes in the power of the architectural imagination to invent meaningful and sustainable cities for the twenty-first century and beyond.

The program requires attendance in the fall, spring, and summer terms.

Course Structure

First Term (fall)	Second Term (spring)	Third Term (summer)
DS1511 — 6 units Design Studio I	DS1512 — 6 units Design Studio II	DS1513 — 6 units Design Studio III
HT2611— 3 units Design Lab I	HT2612 — 3 units Design Lab II	HT2613— 3 units Design Lab III
HT2711 — 3 units Advanced Architectural Studies I	HT2712 — 3 units Advanced Architectural Studies II	Elective Seminar — 3 units
Elective Seminar — 3 units	Elective Seminar — 3 units	Elective Seminar — 3 units

Master of Science in Design Theory and Pedagogy

SCI-Arc EDGE, Design Theory and Pedagogy is a unique one-year (three term) postgraduate degree program leading to a Master of Science in Design Theory and Pedagogy.

The program is highly competitive and requires a terminal degree in architecture for admission (B Arch, M Arch, or equivalent).

Where will the next generation of theorists and teachers come from? Because of how the world is changing, this question may be a complex one moving forward in architecture. The strict separation between practice and academia has been fading, but has now become completely ambiguous due to new research models at the university and new knowledge-based forms of practice. Accordingly, this program addresses a new kind of career that has emerged in architecture. In recent years, a new kind of architect-theorist-educator has become a progressively more important voice in design culture. Despite the importance of this new kind of architect, academia hasn’t been able to produce a program to specifically train talented young architects to occupy this new space and facilitate the development of these new protagonists. At the traditional university, we primarily find today professional programs to train practitioners and PhD programs to train scholars. This program is intended to occupy the space in between these two known models of education and targets specifically a hybrid career in academia where the next generation of design studio instructors can emerge.

This program focuses on the development an intellectual framework that can sustain a life-long theoretical project in architecture. Students are given substantial opportunities for acquiring practical teaching experiences in how such an intellectual framework can find synergies in pedagogical practices today. Utilizing SCI-Arc itself as a hands-on teaching laboratory, the long-term project of this program is to develop new design pedagogies and construct a new apparatus for the production of design theory.

The program requires attendance in the fall, spring, and summer terms.

Course Structure		
First Term (fall)	Second Term (spring)	Third Term (summer)
DS1900 — 6 units Design Studio I	DS1912 — 6 units Design Studio II	DS1913 — 6 units Design Studio III
HT2511— 3 units Design Lab I	HT2512— 3 units Design Lab II	HT2513— 3 units Design Lab III
HT2711 — 3 units Advanced Architectural Studies I	HT2712 — 3 units Advanced Architectural Studies II	Elective Seminar — 3 units
Elective Seminar — 3 units	Elective Seminar — 3 units	Elective Seminar — 3 units

DESIGN STUDIOS

Undergraduate (Core Studios)
DS1010 | 1A studio | OBJECTS: Mass and Interiority I

The first studio of the foundation sequence introduces students to different means of working abstractly and spatially through a series of carefully calibrated exercises, focusing on formal ordering systems and geometric manipulations. Throughout the semester, students are offered a range of tools, skills, and conceptual schemes for working and developing ideas. The exercises comprise a catalogue of formal and spatial geometric investigations. The primary aim of these exercises is to explore the critical relationship between mass and interiority. Investigating various techniques of transformations, students follow a controlled process of articulating mass and its interior as they are introduced to various representational mediums, alternating between digital modeling, orthographic drawing, physical models and photography.

DS1011 | 1B studio | OBJECTS: Mass and Interiority II

Building from the tools and techniques of formal thinking developed in the first semester, this course introduces students to an expanded vocabulary of architectural fundamentals. Notions of scale and order are considered as students work through formal investigations of mass and interiority. The course is structured as a series of sequential projects beginning with a formal precedent analysis that serves to structure an understanding of order and eccentricity in both plan and section. Following the precedent analysis, students move through a series of exercises focusing on techniques of translating two-dimensional information into three-dimensional form. The formal investigations culminate in the design of a small institutional building. Emphasis is placed on developing an analytical process for design, and the ability to express this graphically and verbally. In addition to the conceptual and formal emphasis of the studio, students are introduced to broader professional issues of environmental stewardship and social responsibility.

DS1020 | 2A studio | OBJECT TO WORLD: Ground and Apertures I

Building on the rigorous geometric and formal studies of the first year, the 2A studio serves as an introduction to buildings as material artifacts, on specific sites, that are organized by diagrams or partis that address form, program, and site in ways that are both coherent and speculative. The studio begins with a precedent exercise analyzing salient building diagrams of the modern and contemporary periods, introducing students to the conceptual basis of formal, structural, and programmatic ordering systems (Mass/Interiority), and building to site relationships (Ground/Aperture). In developing the building project, students are introduced to site design, accessibility requirements, solar orientation and shading, and consideration of the diverse needs and interests of project stakeholders and users.

DS1021 | 2B studio | OBJECT TO WORLD: Ground and Apertures II

The 2B studio follows the lessons of previous semesters by designing material form (Mass/Interiority) in close relationship to techniques of drawing and modeling. This studio expands from building massing models to constructing materially-specific models that emphasize building systems. This shift addresses material constraints—such as size and thickness, structure, and finish—which, in turn, produce interesting limits and problems of translation between digital and physical media. The project of the studio is located on an urban site that allows for a close study of circulation and entry sequence on both interior and exterior (Ground/Aperture), and addresses the design of public space, traffic flow, and site accessibility. The 2B studio is a precursor to the third year, which enlarges the specificity of the models to include structural, mechanical, and environmental systems.

DS1030 | 3A studio | AMIGAA: Articulation and Tectonics I

Moving from the conceptual and the abstract to the physical realities of building, the work of the fifth studio of the six-semester core sequence aims to productively embrace novelties and differences in the production of vertical organizations. Students consider the uses of precedent and antecedent in their work, while the main investigation examines the particular impact of the building envelope and its material and geometrical determinations on site. The design work focuses on a tall building form and the capacity to use transformation as a methodological tool to guide a rigorous approach to decision making. By studying the specificities of the tall building envelope, students are exposed to the tight dependency existing between serial determinations of: the geometric and material order of the outermost surface and the spaces it encloses, including the building's core and structure; construction technologies and its tectonic and environmental implications; and its iconographic performance in today's metropolis.

DS1031 | 3B studio | AMIGAA: Articulation and Tectonics II

The 3B Studio introduces students to the comprehensive design and development of a large scale, institutional building on an urban site. Advancing on the pedagogy established in previous studios (AMIGAA: Mass, Interiority, Ground, Aperture and Articulation), this studio focuses on the design, development, and tectonic logic of the building envelope and its ability to articulate contemporary formal organizations. Assemblage versus monolithic form, surface versus mass, iconicity and image, the intentional obscuring of hierarchical mass, layered, and graphic assemblies, tectonics and materiality, constitute a range of concerns in the design work. Beyond design competence, students are expected to articulate and argue for conceptual and disciplinary positions in relation to issues of AMIGAA in anticipation of more advanced work in vertical and thesis studios.

DS1040 | 4A studio | AMIGAA: Positions

The final studio in the core sequence introduces students to independent thinking and integrative design through a model-based project. With one foot in core and one pointed towards thesis, the pedagogy is based on culminating all previous core studios by charging the students with taking a disciplinary position on the role of Mass, Interiority, Ground, Aperture, or surface Articulation (AMIGAA), or possibly relations across all five. The studio, as a whole, works on the same project and site with different trajectories according to the framework laid out by each instructor. This provides a platform for students to see how the same problem can be seen through different lenses, from the conceptual to the phenomenological. Precedent research is used as a vehicle for understanding their latent diagrams in relation to AMIGAA as well as cultivating a genealogical ethos in order to model thesis pedagogy directly to the students.

DS1051 | 5B | Thesis

The SCI-Arc Undergraduate Thesis is the culmination of the five year B.Arch curriculum. A focused thesis project for a highly resolved building design, both conceptually and technically, manifests the cumulative knowledge students have acquired throughout their education and acts as a point of trajectory from which to engage the discipline, field and profession at large. A focus is placed on presenting and defending positions and contributing to contemporary discourse through a project that advances the highest degree possible of design and technical expertise coupled with critical thinking. Students are expected to develop a critical and rigorous approach to architecture and to explore the forefront of the discipline, leading the conversation in terms of aesthetic agendas, architecture's contemporary and future societal role, and the impact of theoretical and technological innovation on architecture's design and communicative repertoire.

4B | 5A | Vertical studio

Students work with Visiting Professors or select SCI-Arc faculty on specific topics in architecture, intended to expose them to a greater variety of positions within the discipline. Projects produced reflect different approaches to form, technique, material, history, politics, the environment, and are intended to contribute real-time to contemporary discourse. Vertical Studios are chosen by students according to a lottery system.

UNDERGRADUATE THESIS

DS1051 | 5B | Thesis

The SCI-Arc Undergraduate Thesis is the culmination of the five year B.Arch curriculum. A focused thesis project for a highly resolved building design, both conceptually and technically, manifests the cumulative knowledge students have acquired throughout their education and acts as a point of trajectory from which to engage the discipline, field and profession at large. A focus is placed on presenting and defending positions and contributing to contemporary discourse through a project that advances the highest degree possible of design and technical expertise coupled with critical thinking. Students are expected to develop a critical and rigorous approach to architecture and to explore the forefront of the discipline, leading the conversation in terms of aesthetic agendas, architecture's contemporary and future societal role, and the impact of theoretical and technological innovation on architecture's design and communicative repertoire.

DESIGN STUDIOS – M.ARCH 1

DS1100 | 1GA studio | Fundamental Design Studio I

The 1GA studio introduces students to the central problems of architecture—geometry, form, and space—through the technologies of their description—diagramming, drawing, and model making.

Introductory exercises emphasize the role of drawing and analysis as both descriptive and generative. Students pay close attention to the development of ideas that inform an iterative and creative process for working with many different media: from physical models, to two-dimensional drawings, to digital interfaces. The course culminates in the design of a small public building in Los Angeles.

DS1101 | 1GB studio | Fundamental Design Studio II

The 1GB studio is a continuation and expansion of the fundamental issues of architecture that were introduced in 1GA, the first studio of the core sequence. The emphasis of 1GB will therefore be to continue to develop both knowledge of the discipline and sophisticated techniques for thinking about and creating architecture. The studio will begin with studies of a set of overarching conceptual, formal, and organizational strategies in significant architectural precedents. The studio will focus on the interaction between two and three dimensions, as well as various methods for the derivation of architectural form. Following analyses of precedents, site, program and type, the semester will culminate in a well-drawn and highly articulate project for a house (a duplex). The project should aim for intelligible conceptual relationships between form, siting, diagram, program and tectonics.

DS1120 | 2GA studio | Comprehensive Design Studio

The first term in the second year of the core M.Arch 1 sequence builds upon the awareness of the discipline and knowledge of architectural production by focusing on issues of Integrative Design. The studio is structured to hone each student's awareness of issues involved in a complex architectural project. Elemental spatial constructs and organizational systems are seen as resulting from and reacting to site conditions, program distribution, structural systems, building envelope systems and assemblies, environmental factors, and building regulations. These influences are considered physical and virtual, permanent and ephemeral, situational and circumstantial. Qualities of site, situation and environment, as well as cultural contexts, are considered as potential tools with which to challenge conventional approaches to architectural design.

DS1121 | 2GB studio | Architecture and Urban Design Studio

This studio examines the relationship between architecture and the city, deepening students' understanding of the ways in which architecture can both inform, and be informed by, the city into which it intervenes. Through both the in-depth study of relevant examples and site research, models of formal, infrastructural and ecological approaches to architecture's interface with cities are considered and applied. Tasked with developing proposals for a large, mixed use project, students are encouraged to design into existing urban conditions with an understanding of the dynamic and interdependent forces of economics, planning, ecology, politics, and infrastructure that have shaped the contemporary city.

DESIGN STUDIOS – M.ARCH 2

DS1200 | 2GAX studio | Computational Design Studio I

Currently the discipline of architecture is in the process of being actively re-defined by shifting political, social, technological, and ecological paradigms. In the 2GAX studio students explore the forefront of the discipline, leading the conversation about the next in terms of aesthetic agendas, architecture's contemporary and future societal role, and the impact of theoretical and technological innovation on architecture's design and communicative repertoire. The Computational Design studio places an emphasis on advancing formal strategies beyond the current state-of-the-art. Students integrate extra-disciplinary techniques and technologies into the design workflow in order to develop innovative architectures that respond to changing societal, ecological and technological contexts. Students' design work engages issues that range from fundamental morphological transformations through rigorous 3D modeling, to the role of the image and digital sampling in the production of architectural form. These issues are explored through a highly resolved building design.

DS1201 | 2GBX studio | Computational Design Studio II

This studio introduces students to the comprehensive design and developments of a large scale institutional building on an urban site, with an emphasis on the broader infrastructural role that architecture can play in the city. With its ability to both perform and organize at the same time, architecture, it is argued, is able to have an effect that is felt at the scale of the urban landscape. This studio focuses on the design, development, and tectonic logic of the building envelope and its ability to articulate contemporary formal and political organizations. Students continue with the core exploration of the forefront of the discipline, leading the conversation about digital tools and issues of aesthetic agendas and formal experimentation.

GRADUATE THESIS

(M.Arch 1 and M.Arch 2)

Since its founding, SCI-Arc has maintained a proud tradition of graduate design theses. In addition to a consistent stewardship of the thesis within the architectural discipline, SCI-Arc has been dedicated to the empowerment of individual design vision on the global stage. The graduate thesis program at SCI-Arc represents a culmination of the graduate curriculum and a significant test of the students' ability to synthesize and produce critical and rigorous architecture.

For M.Arch 1 students, preparation for the thesis begins at the end of the first year, when they submit portfolios of their work to a graduate review committee, who review their strategies of representation and ability to communicate effectively. Prior to entering the Thesis Research and Preparation class (thesis prep), all graduate students submit their portfolios, which provide immediate feedback on their particular design vision and serve as a solid foundation for the development and direction of each individual student. In thesis prep, students work in small, topical workgroups, led by a thesis advisor, to prepare their argument and the research and materials necessary for an intelligent thesis.

Upon successful completion of thesis prep, students are encouraged to strengthen their thesis arguments through the selection of a thesis advisor of their choice with whom they will work independently on their design thesis. Thesis advisors are not limited to SCI-Arc faculty: Students may select advisors from outside the school in order to foster an intellectually challenging relationship. During the thesis term, students undergo a series of public reviews, with their advisor present, to evaluate progress and develop their projects in the light of the collective intellect of the reviewing body.

The SCI-Arc graduate thesis program culminates in a public two-day event in which students present their thesis projects to critics from all over the world. A celebration of academic achievement, the SCI-Arc thesis weekend is widely regarded as a major forum for the discussion of fresh insights and innovative concepts among noted theoreticians and practicing architects.

Jury panels comprising members of the international, national and local design community, along with SCI-Arc faculty members, discuss and critique the work in hour-long panel sessions. Following a question and answer period, the discussion opens to the attending audience members, other SCI-Arc faculty, students and community members.

DESIGN STUDIOS – EDGE

Architectural Technologies

DS1711 | AT Design Studio I

The introductory studio of the Architectural Technologies program introduces students to advanced topics in architectural technologies with a focus on machine vision and automation. Students develop a semester-long design project applying newly acquired technical knowledge.

DS1712 | AT Design Studio II, Vertical Studio

In the second semester of in the program, students participate in the SCI-Arc vertical studio lottery and have the opportunity to take an advanced studio of their choice.

DS1713 | AT Design Studio III

The final design studio of the program develops a comprehensive design project following the premises developed during Design Lab II. With a focus on machine vision and artificial intelligence, technology is understood conceptually not as passive machines but as active agents of design collaboration.

Fiction and Entertainment

DS1800 | FE Design Studio I

The introductory studio of the Fiction and Entertainment program introduces students to conceptual problems of how fiction operates in contemporary life. Critically examining the effects of technology on culture and society today, students develop a semester-long project authoring a short film exploring theoretical topics.

DS1812 | FE Design Studio II

Building on the basic skills developed in the introductory design studio, students develop a more ambitious narrative structure for their ongoing short film projects. Students are introduced to methods of acquiring on-location footage.

DS1813 | FE Design Studio III

The final design studio of the program develops final versions of the projects. The studio concludes with a public screening of the students' authored short films.

Design of cities

DS1511 | DC Design Studio I

The introductory studio of the Design of Cities program introduces students to contemporary discourses in urban form. With a focus on historical problematics of urban ground and property rights, students develop speculative urban projects in relationship to urban grids and infrastructure.

DS1512 | DC Design Studio II, Vertical Studio

In the second semester of in the program, students participate in the SCI-Arc vertical studio lottery and have the opportunity to take an advanced studio of their choice.

DS1513 | DC Design Studio III

The final design studio of the program develops a comprehensive design project following the premises developed during Design Lab II. With a focus on the influence of finance on the contemporary city, students develop speculative design projects incorporating new urban typologies.

Design Theory and pedagogy

DS1900 | DTP Design Studio I

The introductory studio of the Design Theory and Pedagogy program focuses on the concept of the core curriculum. Two of the three studio days each week uses SCI-Arc as a live teaching laboratory, integrating the students into the teaching practices of the core curriculum in SCI-Arc's undergraduate program. The third studio day of each week is spent in discussion with the studio instructor, evaluating pedagogical observations. This introductory design studio develops new core studio exercises as a semester-long project.

DS1912 | DTP Design Studio II

Building on the study of the core curriculum, students in the second design studio examine the pedagogies of advanced studios. Two of the three studio days each week uses SCI-Arc as a live teaching laboratory, integrating the students into the teaching practices of SCI-Arc's advanced studios (Vertical Studios). The third studio day of each week is spent in discussion with the studio instructor, evaluating pedagogical observations. This intermediate design studio develops a syllabus and brief for an advanced studio as a semester-long project.

DS1913 | DTP Design Studio III

The concluding design studio of the program asks students to develop design projects following their advanced studio briefs from the spring semester design studio. With a focus on critically examining the theoretical merits and practical problems of their advanced studio syllabi, students develop first-hand experience in the possible outcomes of their pedagogies.

VERTICAL STUDIOS

SCI-Arc's upper level studios brings students into contact with renowned architects from all over the world whose work has placed them firmly at the forefront of the discipline. Visiting instructors have included Ilse Ann Couture, Jessie Reiser, Peter Cook, Peter Trummer, Sulan Kolatan, Brendan MacFarlane, Michele Sae, Michael Malzan, Wolf Prix, Thom Mayne among others. Students from both undergraduate and graduate programs who have completed their core sequence work together in groups of fifteen or fewer.

Recent vertical studios include:

Please note that these courses are not offered every semester and are subject to change. Check the latest course schedule for current course offerings, and visit my.sciarc for each semester's course descriptions.

DS4307 | Between Fact, Fiction, and Fetish: The making of Architecture

Ferda Kolatan

This advanced design studio investigates how recent concepts of fact, fiction, and fetish have altered our perception of the real world and how these changes can manifest materially in design. The once clear demarcation line between these terms has all but dissolved, leaving us with a much stranger reality of fictionalized facts and factual fictions. Speculative realist thought has challenged both the world of ideas as well as "the real", and in the process has handed us new conceptual tools to reevaluate architecture and design.

DS4307 | Impostures and Impositions

Peter Testa

During the first half of the semester, students will work with a paired digital and physical workspace and be introduced to imaging techniques beyond the render window of conventional 3D modeling. By manipulating and transcoding image-based information using discipline specific representational techniques, hybrid digital/physical models will be developed with the capacity to create new architectural objects. In the second half of the semester students will have the option to work with one or more of these referent objects in the creation of a super-object and forged / faked materials manifest in a series of images, drawings, and models.

DS4355 | Culture as Catalytic Strategies in Developing Nations

Thom Mayne

In the fall of 2012, The Now Institute initiated Haiti Now as an intensive, cross-disciplinary research and design project dedicated to contemporary urban issues and design potentials in Haiti following the 2010 earthquake. The two-year project encompasses a comprehensive critical analysis of Haitian modern history and politics, a data-driven research investigation of planning, infrastructural, and social issues, and a set of collaborative design proposals developed in concert with

Haitian governing and community partners to target reconstruction through the lenses of resilience and culture. In 2014, the bilingual 730 page Haiti Now was published.

DS4356 | Hate Couture: Joyce flagship, Miami, Florida

Ali Rahim

This design research studio will explore design techniques with haute couture and fashion industry innovation and combines it to develop a new flagship store for Joyce in Miami, Florida.

We will design a flagship headquarters for Joyce to underline it's innovation, new techniques in production, provocative forms of presentation and cutting edge couture. We will study the top couture houses contribution to the developments in the design and manufacturing of garments. With a keen interest in fabrication and new materials we will develop a building that combines the latest form, materials and technologies available to Haute Couture. We will utilize these innovations in the development of a flagship particular to Joyce that serves Miami and the US.

DS4000 (06) | Miscellany

Andrew Zago

Weak form was a term coined by Peter Eisenman and applied to a number of architectural experiments carried out in the late 1980's. Described at the time by Jeffrey Kipnis as the "disciplined relaxation of geometry" these experiments were, in part, attempts to move past both the smug certainties of post-modernism and the frenetic gymnastics of deconstruction. What was made weak was the hegemonic propensity of architectural form, positing an architecture of provisional and equivocal asterisks in place of fixed and unambiguous exclamation points. This strain of work has never totally disappeared from architecture. It resurfaces in the work of architects as dissimilar as César Pelli and Alejandro Aravena [1] and even forms the foundation of the introductory MArch 1 studio at SCI-Arc (with Tony Smith's sculptures embraced as weak form avant la lettre). Of interest to this studio is not weak form per se, but rather conditions that are extrapolated from its implicit political ambition.

DS4000 (09)| Monumental Need

Elena Manferdini

Every time an object is built it establishes a relationship with its ground – regardless of the intent of the architect. A building might negate the context or embrace the local conditions. Irrespective of either scenario, the figure/ground question remains unavoidable. The ways a building engages with the ground transcends design, and is highly influenced by social, economic, and political factors.

Downtown Los Angeles is an example of a city where many urban functions have moved indoors. Private developments have become the home of shops, parking

structures, institutions, and organizations. Simultaneously, mixed-use developments have grown larger and more efficient. As a consequence of this process, buildings have become introspective and self-sufficient – fueled by economic factors that naturally produce mute, impenetrable box-shaped plinths hosting these functions. Los Angeles is often construed as being a pedestrian un-friendly city; while we like to think that nobody walks in LA, these built environments continue to form public spaces to ignite human interaction. It is through these public avenues that people have close encounters with buildings.

DS4000 (10) | Russia, a wrapped in a mystery, inside an enigma

Eric Owen Moss

It's currently run by CEO Herman Gref who, fifteen years ago was Putin's Finance Minister. The bank intends to build a new headquarters in the Skolkovo portion of New Moscow, adjacent to 'old' Moscow, in a zone designated as the Skolkovo Innovation center, a Russian aspiration for its own Silicon Valley.

It is intended that the new Sberbank will be the 'icon' of the new district, and a landmark for Moscow, old and new.

The operational pro forma of the project is openness and flexibility of use, meaning there is no enduring definition of the operational modus operandi of the bank, but rather the bank, over time, is understood and continuously altering work modes and personnel as purposes, working methods, working assignments, and media and information tools continue to evolve.

The project is less a bank in a conventionally recognized sense, more intended as a center for conceptual innovation in terms of the development and application of new information media, both with respect to the internal organization of financial products, and in terms of the distribution/exchange of that information with other banks, businesses, and local, national, and international constituencies.

As the focal project of the D1 district the bank is expected to set a design precedent for the area, not simply as an old bank prototype, but more as a contemporary banking/media/information exchange work place, with added public, social, and recreational amenities that permit workers to enjoy a wide range of work day options aside from their requisite business related tasks.

DS4000 (03) | Fiction and Entertainment

Liam Young, Alexey Marfin

The language of communication in Fiction and Entertainment is time based media, film, VR and gaming. No prior experience in these techniques is necessary as the studio will bring you together with an ensemble of illustrators, technologists, visual effects artists, sound engineers and directors. You will work through workshops and mentoring sessions with practitioners who are visualizing Holly-

wood's largest productions and legends of the industry whose work still shapes much of contemporary entertainment culture. Studio coordinator Liam Young, assisted by director and visual effects artist Alexey Marfin (Factory Fifteen) will be your regular points of contact each week with screenwriters, concept artists and illustrators joining regularly through the semester. Christian Lorenz Scheurer, artist for films such as *Suicide Squad*, *Batman vs Superman*, *Independence Day 2*, *Matrix* and numerous others will follow the studio with a parallel world-building seminar. You will be trained in film, special effects, digital painting, gaming and animation workflows including camera techniques, compositing (Nuke), simulation and rendering. Together the Fiction and Entertainment crew will help you to develop the props, spaces, machines, cultures and narratives of your imaginary city, the landscapes that surround it and the stories it contains.

DS4000 (11) | Strategy

John Enright

Using the Greek origins of strategy as a military term may in fact be apropos to the current urban condition that SCI-Arc faces. SCI-Arc is situated in a conflict zone of sorts, as the so-called Arts District is in the midst of seismic changes. Competing developers backed by large investment firms and banking institutions are currently acquiring land and rapidly changing the area. The population of the Arts District itself is estimated to triple in the next five years. While long standing Arts District residents, through various neighborhood organizations, resist and voice their concerns in a vain attempt to slow down the inevitable growth the region, the City of Los Angeles departments of planning and zoning are currently playing catch-up to understand how to cope with developers eager to change long-standing zoning ordinances of the formerly manufacturing and industrial core. Current land owners of the remaining properties are faced with ensuring their long-term interests given that these zoning changes may impede their options. The inevitable breaking point of maximized density can, and will, leave them without options to develop their own properties as the infrastructure of; streets, utilities, mass transit, etc., become stretched too thin to allow further development.

It is in this context that SCI-Arc must now begin a strategy of examining our future on our own terms. We need to be knowledgeable of the current urban situation of our surroundings, and in a paradoxical way, acknowledge that the act of SCI-Arc itself, landing in the Arts District in 2000, with 650 students, staff, and faculty, may have in fact been the first seed of this explosion of development, perhaps as we like to say, we make our own problems.

DS4309 | Taxidermy Architecture

Hernan Diaz Alonso, Rachel McCall

Recent interest in types, precedents, and history in general, seems driven by a fear of architecture dying. Relative to the fear of dying, there are some interesting alternatives to antiquarianism. Everything dies, but there are scenarios for keeping things in some sense alive. There are ghosts (everlasting spirit), zombies (un-dead), embalming (scientific preservation), and ruins (fetishizing the dead). These are all interesting options, but the one that seems most interesting to me right now is the stuffed animal. I think we spend a lot of time these days already doing some form of taxidermy by obsessing over known architectural postures. Maybe in some sense, all architecture can be thought of as a form of taxidermy—an attempt to freeze time and make something dead look like it is alive. But in taxidermy, there are two ways to do it. Most of the taxidermy we see is an attempt to preserve a known posture and perversely attempt to make the past permanent. I'd like to try something different. What if we approach taxidermy as a perpetual representation of a present that never exists—something that promises a strange possible future?

This studio will use taxidermy as an architectural method. We'll see if we can turn taxidermy into a proto-architectural tool. The interest here is to force a shift from typologies to speciation. If types are traditionally viewed as categories of standardization (and in effect, symbolic expressions) then species are malleable entities that are in constant metamorphosis. Whereas comparative analysis and language are the mechanisms of typologies, adaptation and mutation are the mechanisms of speciation.

DS4352 | Water-colour

Florencia Pita

This studio will investigate the fabrication of artificial landscapes and figural buildings, within the context of industrial infrastructures and a river of concrete. The LA River is undergoing mayor transformations, what once was nature, is now a hardscape of concrete that spans 51 miles. The potential of this river to shift from infrastructure to public spaces could transform the city of Los Angeles, and provide a new model of reuse, were active (as opposed to obsolete) infrastructure can perform multiple urban capacities. The LA River is not only an urban connector with uninterrupted linear path, but also it carries water, which flows toward the ocean. This extravagant expenditure of water in a desert city seems paradoxical. This studio will take on the topic of water from a painterly manner. Architecture's contribution to this topic cannot try to imitate the work done by engineers, but our potential resides in design, and design ideas. For this reason we will look at water in the manner that painters look at water, not for what it means but for what it exposes, a kind of semblance of water. Water-colour will use both water and color as the ingredients to connect landscape with building mass.

DS4353 | Ghostly**Dwayne Oyler**

In my spring 2017 Vertical studio (aka, the “Ghostly” studio), the class developed a set of interests that (at least for us) began with our 2014 proposal for the Guggenheim Helsinki. In that project, the idea of the veiled or shrouded volume gave a character to the building that was of particular interest to us – it was intended to simultaneously have clear formal definition, while conveying a more ephemeral sense of its formal status.

This studio builds on this idea of ghostly characteristics, with a specific interest in moving beyond the seductive nature of the image toward a more physical and tectonic outcome. Increasingly skeptical of the seductive image as an architectural outcome, but admittedly enamored with them as a place to begin and as a thing to interrogate, this studio is charged with giving physicality to the idea by dealing directly with a set of key characteristics.

DS4379 | Play the Part**Devyn Weiser**

The studio speculates on the syntax of multiple, non-correlated, digital and physical objects. Through a non-compositional approach projects will develop new coherences among parts that are neither dialectical nor differential. While retaining a level of disciplinary specificity and legibility this contingent model playfully harnesses the discrepancy between digital and physical processes.

DS4376 | What is an Apparatus?**David Ruy**

If an analogy can be drawn between an architectural object and the Wizard of Oz’s mysterious machine, we would recognize our historical role as architects being that of the designer of the curtain. In the problem of decorating or camouflaging the apparatus, there are more than enough things to worry about. Designing that curtain is not easy. Designing that curtain is also a necessity of civilization.

In this studio, I would like to deviate from this traditional obligation of architecture and think about the apparatus itself and consider what it might mean to have an apparatus hidden in plain sight. The hard part here is figuring out how this analogy actually translates relative to the specific disciplinary categories of architecture. Is that curtain merely the facade? Maybe it’s the context. Maybe it’s the program. Maybe it’s the style. I don’t want to assume that the translation of this analogy is obvious. But once we decide what the curtain implies, figuring out what the apparatus is becomes easy—it’s everything else.

DS4384 | The Future of Prison**Frank Gehry**

The growing movement to end mass incarceration has compelled even reluctant

observers to critically examine confinement and its crippling impact on individual lives, communities of color and the social and economic fabric of the country. But we have to look beyond just size. U.S. prisons, as well as jails in larger cities, are not only massive in scale they are brutal in design and operation. Cut50 aims to halve the prisoner population, a significant achievement that would still leave 1.1 million people in prison or jail. The more ambitious goal of reducing the prisoner population by 75% would mean that more than 600,000 people still would be removed from the community at large. Where in America should they reside? In what type of institution?

For centuries and with more or less lofty ambitions, people have done little more than tinker with the design of prisons. Phones barely larger than credit cards hold the traces of our lives and we’re on the brink of roads populated by driverless cars, but our correctional facilities are not far removed from their medieval predecessors. Perhaps the word prison has constrained imagination and should be retired.

Led by Frank Gehry and Gehry Partners, this studio calls on emerging architects to break free of current conventions and re-imagine what we now refer to as “prison” for a new era. To inform your work, the studio will tap the knowledge of criminal justice experts and the lived experience of men and women who have been incarcerated, and will offer you an opportunity to visit at least one correctional facility near Los Angeles. The hope is that radically new designs informed by real-life experience will make it possible for Americans to picture and seriously consider something other than the hulking, damaging institutions that exist today.

LIBERAL ARTS

The Bachelor of Architecture degree program at SCI-Arc includes a fully integrated Liberal Arts curriculum broken into 12 core seminars and 3 elective seminars, comprising a total of 45 units of nonarchitectural content.

The Liberal Art’s curriculum at SCI-Arc reimagines the training of young architects today, offering students breadth of knowledge and critical thinking skills to complement their design studio education. Nonarchitectural content serves the students in two ways: firstly, as an intensive series of courses within the core concentrations of art, philosophy, science, and history and secondly, as a flexible series of elective seminars taught by leading thinkers, writers, theorists, and practitioners in a wide range of fields and subjects, from media theory to gender studies to new models of nature. By preparing students to think critically, engage other disciplines directly, and acquire knowledge through research, writing, and debate, students are positioned to understand the inherent complexity and expertise required in more specific fields during the later sequence of the B.Arch program.

Throughout the Liberal Arts curriculum, students are encouraged to: think both logically and disruptively speak and write effectively analyze and organize information synthetically collaborate creatively interpret thoughtfully and argue persuasively discover new lines of inquiry, raising urgent questions that challenge received conventions and readymade theories with conceptual care and intellectual rigor draw connections from a multiplicity of perspectives, opening alternative ways of seeing, thinking, and understanding deliberate and defend judgments with conviction, reason, and passion. The ethos of risk taking shared by all Liberal Arts courses not only stokes curiosity, but nurtures selfconfidence, preparing students to meet the high standards of B.Arch thesis work, as well as for specific engagement within their field and the profession of architecture.

A Liberal Arts committee, consisting of the Undergraduate Program Chair, Liberal Arts Coordinator, History + Theory Coordinator, Director of Admissions, and Academic Counselor periodically review and update Liberal Arts requirements.

Core Liberal Arts Seminars B.Arch

LA8010 | Design Cultures

Design Cultures is intended to survey the field of design as a human activity and to introduce students to the immense variety of pathways available to students as they move ahead in the world as a designer and as an architect. The aims of the class are to expose students to a broad range of design work in the fields of furniture, architecture, interior space, set design, exhibition design, product design, and landscape; to give them a broad historical background of design activity, aesthetic epochs, and styles; and to develop in them the eye and senses of the curious and critical observer of the products of design culture.

LA8011 | Forms of Writing

Forms of Writing is designed to teach writing and composition skills at a collegiate level. Different approaches to writing are explored through the reading and composing of literary analysis, persuasive essay, memoir, critical review, and a short research paper. Critical study includes the analysis of poetics, modes of writing organization, academic writing, literary style, the short story, and research strategies. Special attention is paid to close textual reading and analysis, peer review and editing. Through the use of rhetorical analysis students become versed in a variety of writing modes. Throughout the course of the semester, attention is paid to sentence style and variety. Guidelines for the correct attribution and citation of primary and secondary sources when performing research are explained and reviewed. Pre-writing exercises help students to generate writing material, both creative and rhetorical. Captions and other editorial techniques are reviewed with an emphasis on clarity and coherence.

LA8012 | Film I

This course is meant to serve as an introduction to the history of film, its aesthetics, mechanics, languages and genres. By analyzing the expressive techniques, forms, and styles of a variety of films, students will assess the ways in which films produce meaning and the status of that meaning in the broader political, cultural, and aesthetic sphere. To best illustrate the changes and maturation of film practices over time, the course will begin with the beginnings of the Cinema itself as the 19th century soon turned into the 20th, focusing each week on a different decade.

LA8013 | History of the Universe and Science

This course examines the history of the physical sciences and their role in reshaping the intellectual cosmology of the west and advancing the exercise of political and economic power by Europe and North America. The physical sciences, and the technologies with which they co-evolved, have been instrumental in creating the modern understanding of the universe around us, yet they have also played an active role in shaping that universe. Students will investigate the paradoxical dual role of physics, astronomy, chemistry, geology, and climatology as both interpreters of a pristine natural world beyond the pettiness of human conflict, and as active constructors of that world through the mechanisms of technology and ideology. The shifting allegiances between the physical sciences and the major political and religious power structures of early modern and modern European and American history will be a persistent theme.

LA8014 | Art History I

Art History I surveys the visual arts from antiquity to the Renaissance to modern art during the interwar period in the 20th century. Artistic styles, art movements, and methods of art production will be contextualized within larger societal, intellectual, and ideological shifts. Students will learn to conduct formal analysis of individual works of art as well as critically engage with key primary and secondary art historical texts through short writing assignments and rigorous in-class discussions.

LA8015 | New Models of Nature and Biology

This course charts the genesis of modern biology from a range of intellectual, social, and political factors. At its core, we will explore how laboratory physiology, natural history, and demography coalesced into a single scientific discipline through the Darwinian Revolution of the mid-nineteenth century and the Modern Synthesis of the mid-twentieth, and how that discipline rose to dominate univer-

sities and the medical-industrial complex following the emergence of molecular genetics between 1953-83. Along the way, the ideological function of biology in areas such as “scientific” racism, eugenics, population control, neoliberal economics, and ecological politics will be investigated. Students will be asked to respond to various theories of nature from contemporary thinkers, and to use material and life sciences as evidence for the development and refinement of these theories and claims.

LA8016 | Art History II

Art History II focuses on the field of contemporary art from 1945 to the present and the artistic and theoretical debates that have structured this discourse. Beginning with Abstract Expressionism in the postwar period, the course explores the rise of experimental, post-studio artistic practices such as Conceptual art, installation art, performance art, relational aesthetics, new media forms, in addition to the resurgence of painting and sculpture since the art market boom of the 1980s. Issues in contemporary art including questions of authorship, feminism, postcolonialism, and the ethics of spectatorship will be addressed.

LA8017 | Philosophy I

This course introduces students to foundational issues initiating the Western philosophical tradition, which include: metaphysics, epistemology, ethics, and political philosophy. Moving from the ancient Greek texts of Plato and Aristotle, the course will survey thinkers from the medieval and early modern philosophical tradition, including Aquinas, Descartes, Machiavelli, Hobbes, Spinoza, Leibniz, Locke, and Hume. Readings will concern: the nature of the good; the just; the ideal political form; the limits and possibilities of knowledge; virtue; the nature and existence of God; free will; primary and secondary qualities; substance; essence; causality; principles of identity.

LA8018 | Philosophy II

Beginning with Kant’s “critical philosophy” and its reception through the 20th century, this course offers an introduction to continental philosophy by tracing the challenge and critique of the eighteenth-century Enlightenment through competing notions of history, time, and critique. To provide an endcap to the philosophy sequence, the course includes an immersive engagement with a singular contemporary philosophical text. Students are required to conduct close reading, vigorous analysis, and supplementary research to support argumentation and debate in classroom seminars on the text in question. The text is chosen annually and is held in common throughout the school. Possible readings include: Bataille, Ortega y Gasset, Barthes, Derrida, Deleuze, Foucault, Arendt, Adorno, Irigaray, Benjamin, and Heidegger.

LA8019 | Film II

This course explores the vital and complex intersections between the arts of film and architecture – from the representation of architects in film to the role of architecture in film and of course the architectural qualities of film itself. Much of the class will focus on films strongly invested in architecture, exploring the relationship between directors, art directors and production designers in the construction of cinematic architecture. Students will be asked to consider the unique architecture of several of the classic Hollywood film studios themselves, as well as the work of architects and designers who have worked in and with film, and have embedded their architecture and design practice in various cultures of the moving image. By the end of the course students will have a new perspective on the impact that films have had on the practice of architecture and the way we experience our built environments.

LA8022 | Contemporary Civilization

This course precedes Thesis in order to connect studio work and architecture with real-time, relevant issues in the world. Issues of technology, geopolitics, the environment, current events and media will be underscored by an emerging sensibility of a post-human/anthropocene in the contemporary era. This course is an advanced seminar led by an expert discourse leader with engaged discussion and graduate-level writing required for all students.

LA8023 | Rhetoric II: Positions in Contemporary Philosophy

This course examines contemporary debates emerging in the wake of critical theory and continental philosophy. Topics include: aesthetics; radical democracy; speculative realism; utopian theory; geo-politics; discourse ethics; post-modernism; gender theory; and identity. Particular emphasis is placed on the development of positions in relation to Thesis work. Live conversation is the primary vehicle of this class.

Recurring Liberal Arts electives

Please note that these courses are not offered every semester and are subject to change. Check the latest course schedule for current course offerings, and visit my.sciarc.org for each semester’s course descriptions.

LA8502 | Aesthetic Theory

Graham Harman

Aesthetic theory is obviously a topic worth knowing for anyone headed into the architecture and design professions. The focus of this course will be on the concept of “formalism” (the notion that the artwork is independent of its wider socio-political surroundings) and the arguments both for and against this way of looking at art.

There will be a significant amount of reading in this course, and students are expected to keep up with it. The semester will begin and end with a classic authority: Immanuel Kant at the beginning, Aristotle at the end. More contemporary figures will be studied during the middle part of the semester.

LA8502 | Constructing Society, A brief History of the Social Sciences

Adam Lawrence

This course examines the history of the social sciences and their role in reshaping the intellectual world of the west and advancing the exercise of political and economic power by Europe and North America. The social sciences, and the technologies with which they co-evolved, have been instrumental in creating the modern understanding of the social world we inhabit, yet they have also played an active role in shaping that world. We will investigate the paradoxical dual role of economics, psychology, anthropology, demography, and human biology as both explainers of a given social system, and as active constructors of that system, through the mechanisms of technology and ideology. The shifting allegiances between the social sciences and the major political and religious power structures of early modern and modern European and American history will be a persistent theme. We will read from both seminal secondary sources in the philosophy, sociology, and history of science, as well as major primary sources starting in the nineteenth century.

LA8506 | Episodes in the Western Diagrammatic Imaginary

Melissa Lo

Often mistaken for a basic tool of reduction, the diagram is a flexible form of argument – and one of the subtlest means of understanding the cultural assumptions that are brought to bear on the production of knowledge. This course moves through a chronological series of case studies in which Western theologians, philosophers, artists, novelists, naturalists, theoretical physicists, logicians, linguists, and art historians employed visual notation to shape and reshape their relationships to reason and materiality, nature and epistemology, word, picture, and culture.

LA8503 | History of Punk

Michael Stock

This semester's focus will be on Punk Rock AND Film...meaning we will be examining both film AND media; namely, music, records, record sleeves, fashion, fanzines, icons AND images (both moving and still).

We will begin by identifying what we mean by the term "Punk," given the indeterminacy of this category (Is it merely a style of music? Of fashion? A moment in time? Is there such thing as 'Punk Film'?). We will begin our investigations by exploring the contradictory histories of Punk—in the UK, New York and California (L.A., Orange County and San Francisco).

We will then consider the relationship between Punk and the society that initially produced and consumed these records, films, fanzines, fashions, icons, ideas. And, of course, the seemingly everlasting legacy that Punk has left behind (in music, film, fashion, youth culture, and the list goes on...) In short, this class will investigate Punk not only in terms of the question "What does it mean?" but also "HOW does it mean?"

LA8504 | Freud and Lacan

Graham Harman

The celebrated Sigmund Freud (1856-1939) was a Viennese medical doctor who became known for treating hysteric and neurotic patients, at first through hypnosis but increasingly through the "talking cure," now in widespread use in the form of psychotherapy. In doing so, he offered a powerful theory of dream interpretation as well as a revolutionary conception of human culture.

Though Freud is accused by many today of following an "unscientific" approach to psychology, his basic concepts have shaped our contemporary self-understanding. Though Freud had many followers and imitators, one of the most original was the French psychoanalyst Jacques Lacan (1901-1981), who is also a giant in such areas in cultural studies and film theory. By separating the concepts of masculinity and femininity from biological sex, Lacan also provided new resources for feminism. Perhaps the biggest difference between Freud and Lacan is that whereas Freud treated the unconscious as a real force hidden from human view, Lacan sees the unconscious as lying at the surface of psychological reality rather than in some concealed depth. This approach made Lacan a major influence on postmodernist philosophers, with their inherent distrust of all notions of deeply hidden essence. In this course we will read some of the key works of both Freud and Lacan, so as to become aware of the stakes in their important debate.

LA8507 | The Swirling Swarm of Drive-less Cars neither loves you nor hates you

Benjamin Bratton

This seminar will trace paths design research drawn from triangulations of artificial intelligence, virtual reality and machine sensing. Why so? For ourselves, we develop virtual environments as a form of mass media native to a post-truth economy; for our cities, we outfit their surfaces with sensory media that situate the evolution of artificial intelligences as a landscape-scale phenomenon. Where do synthetic sensation and machine sensing intersect?

This seminar will oscillate between theoretical mapping of possibilities and practical modeling of tangible experiments. The latter will focus on modeling new VR tools for scientific design and discovery, and exploring what experiences are possible when new map virtual tactility and virtual sight/sound. As a group, we will move between seminar, studio and laboratory, meeting both at SCI-Arc in Los Angeles and, on occasion, at UC San Diego in La Jolla.

HISTORY + THEORY

The History + Theory curriculum at SCI-Arc provides a rigorous immersion into the history, theory, and criticism of architecture in order to equip students with the skills necessary to become leaders in the production of architectural discourse in a global context.

With today's proliferation of aesthetic agendas and technical virtuosity comes a distinct need for new modes of discourse through which design innovations may be translated into significant contributions to cultural production. Thus the History + Theory curriculum conceives of design innovation and conceptual intellection as intimately intertwined and equally subject to formal manipulation. In other words, at SCI-Arc, we do not merely theorize or criticize design, we design the discourse. This stance obliges us to remain attentive to conventional modes of inquiry as we open up other rhetorical avenues along which to advance nascent disciplinary trajectories.

In addition to a focus on history, theory, and criticism of architecture, H+T courses direct attention to themes such as the rhetoric of virtuosity, the construction of audiences, the modulation of attention, to discourses of the beautiful, the grotesque, the awkward, the counter-intuitive, and to other contemporary themes. The curriculum also addresses fundamental questions of disciplinarity, the continued relevance of lingering critical vocabularies and techniques, and the intersection of architectural discourse with philosophy, art history, literature, music, popular culture, and other modes of cultural production.

Core History + Theory Seminars B.Arch

HT2012 | History of Architecture and Urbanism I

This course provides a chronological review of major movements in global architecture and urbanism from pre-history to the 16th century. Students will analyze major movements and key works in order to understand the cultural, religious, anthropological, and sociological factors involved in the design of buildings and cities throughout the world. Particular attention will be paid to the analysis of specific relationships between the organization, configuration, and articulation of buildings and cities as well as the historical, conceptual, and political contexts with which they are associated.

HT2024 | History of Architecture and Urbanism II

This course provides a chronological review of major movements in global architecture and urbanism from the 16th to the 20th century. Students will analyze major movements and key works in order to understand the cultural, religious, anthropological, and sociological factors involved in the design of buildings and cities throughout the world. Particular attention will be paid to the analysis of

specific relationships between the organization, configuration, and articulation of buildings and cities as well as the historical, conceptual, and political contexts with which they are associated.

HT2025 | History of Architecture and Urbanism III

This course provides a chronological review of major movements in global architecture and urbanism from the 20th century to the present. Students will analyze major movements and key works in order to understand the cultural, religious, anthropological, and sociological factors involved in the design of buildings and cities throughout the world. Particular attention will be paid to the analysis of specific relationships between the organization, configuration, and articulation of buildings and cities as well as the historical, conceptual, and political contexts with which they are associated.

HT2030 | Architectural Theory

This course tracks developments in architectural theory and discourse from the Humanist era to the era immediately following WWII to the present day. Students read and dissect primary texts from significant fields of architectural study including historical texts on symmetry, character, form and function; and 20th century postmodern studies, phenomenology, structuralism, deconstruction, post-structuralism, feminism, materialism, and other "critical studies." This course introduces students to architectural argumentation through reading and critique.

HT2035 | Rhetoric I: Contemporary Architectural Discourse

This course offers an introduction to contemporary debates and discourse in architecture. It surveys practices and firms of the recent era, as well as examines key texts associated with the formation of the architectural contemporary. Students will be introduced to topical subjects, such as figures, objects, effects, sensations, color – and asked to reflect on these topics as engaged in debate. This course emphasizes reading and debate.

HT2050 | Thesis Project Research

During the Thesis Project Research semester, students are introduced to research methods in advance of the Thesis Studio. The seminar provides a structured environment for students to articulate architectural research programs embedded in both the discipline and the contemporary situation in architecture. Students draw upon work from previous studios and identify new trajectories supporting individual inquiry.

B.Arch Writing Clinic

This writing clinic is an appointment-based non-credit workshop where students can receive help on work in progress. A faculty member provides one-on-one help with formulation, articulation and structure of student ideas and helps the student to discover the appropriate expression of written documentation.

M.Arch 1

HT2100 | Introduction to Contemporary Architecture

This course introduces and contextualizes key concepts and ideas in 20th-century and contemporary architecture to provide a foundation for the study of both the discipline and practice of architecture. After introducing fundamental concepts related to architectural form and composition, lectures will focus on major 20th-century movements including modernism and postmodernism, will review major projects and polemics of the periods, and unpack salient theoretical arguments associated with them. The course will devote significant attention to specific relationships between the organization, configuration, and articulation of buildings and the historical, conceptual, and cultural arguments with which they are associated. The course will also emphasize the use of historical precedents by architects and the cultural and social implications of design decisions, particularly those related to issues of diversity and social equity.

HT2101 | History of Architecture and Urbanism I

This course provides a chronological review of major movements in global architecture and urbanism from pre-history to the 16th century. In it, students will analyze major movements and key works in order to understand the cultural, religious, anthropological, and sociological factors involved in the design of buildings and cities throughout the world. Particular attention will be paid to the analysis of specific relationships between the organization, configuration, and articulation of buildings and cities as well as the historical, conceptual, and political contexts with which they are associated.

HT2120 | History of Architecture and Urbanism II

This course provides a chronological review of major movements in global architecture and urbanism from the 16th to the 20th century. In it, students will analyze major movements and key words in order to understand the cultural, religious, anthropological, and sociological factors involved in the design of buildings and cities throughout the world. Particular attention will be paid to the analysis of specific relationships between the organization, configuration, and articulation of buildings and cities as well as the historical, conceptual, and political contexts with which they are associated.

HT2121 | History of Architecture and Urbanism III

This course provides a chronological review of major movements in global architecture and urbanism from the 20th century to the present. In it, students will analyze major movements and key works in order to understand the cultural, religious, anthropological, and sociological factors involved in the design of buildings and cities throughout the world. Particular attention will be paid to the analysis of specific relationships between the organization, configuration, and articulation of buildings and cities as well as the historical, conceptual, and political contexts with which they are associated.

M.Arch 2

HT2200 | Theories of Contemporary Architecture I

This seminar provides a platform for students to do work on the territory of contemporary, global architectural practice in the interest of formulating their current studio production as well as future professional agendas. Currently practice is in the process of being actively redefined by shifting political, social, technological, and ecological paradigms. Taking as a starting point the idea that various modes of appropriation have been formative in the shaping of architectural history, we will examine the complex terrain defined by the recent shifting of paradigms and examine how these acts of appropriation are actively configuring the contemporary moment. Acting as architectural entrepreneurs, we will identify niches for future action and innovation. The seminar will introduce several contemporary disciplinary themes through readings and project presentations.

HT2201 | Theories of Contemporary Architecture II

Building on the base of ideas established in Theories of Contemporary Architecture 1, this course will examine in detail recent and historical texts on architecture, philosophy, literature, music, and art. Through these texts, a diversity of approaches to architectural theory and practice will be examined and interrogated within broader social, cultural, and historical contexts from the 1950s to the present. Through analysis of and critical writing about these texts as well as buildings and projects of the period, students will develop new vocabularies for contemporary architectural discourse.

HT2410 | Thesis Research

The Graduate Thesis Program at SCI-Arc represents the culmination of the master curriculum and it is the most significant test of the students' and school's ability to synthesize and produce critical and rigorous architecture. Graduate thesis fosters a broad culture of ideas, inquiry and position-taking. At the crossroads between independent researches and the rich culture of the broad architectural domain, SCI-Arc's thesis is structured to promote an open-ended spirit of inquiry, responding to shifts in society, technology and culture that define our contemporary architectural field. Divided into two semesters long -Thesis Research during spring and a Design Thesis Studio during summer- thesis at SCI-Arc is the place in the curriculum where students are asked to produce a personal and original contribution to the discipline of architecture, a contribution that advances the realm of architectural research and ideas rather than one that simply revisits existing paradigms.

EDGE

HT2504 | EDGE Research Seminar

Postgraduate students have the option to continue their research projects from Advanced Architectural Studies II by enrolling in this course, replacing an elective requirement. This optional course has to be approved by the Chair of Postgraduate Programs.

HT2511 | DTP Design Lab I

The initial design lab of the program surveys the history of architectural education starting with founding of the École des Beaux-Arts (17th century France) to the present. Examining the evolving social contexts within which the figure of the architect is drawn and redrawn, students situate contemporary design theory and pedagogy within a well-developed historical understanding. Attention is placed on how design studio problems change as societies and economies transform over time. The problem of asserting a foundational or core curriculum is studied relative to the difficulties of how the historical discipline inevitably adjusts to the changing circumstances of the world and evolving principles of education. The crucial role of technologies in architectural education and its relationship to architectural practice is emphasized throughout the semester.

HT2512 | DTP Design Lab II

The second design lab of the program examines the history of the university as an instrument of knowledge. The problem of how architectural knowledge is positioned relative to institutionality is examined both historically and theoretically. The course is structured as a series of workshops focused on different aspects of this problem. Students develop and present their theoretical positions on the topics in each workshop.

HT2513 | DTP Design Lab III

The final design lab of the program looks ahead to building an academic career. Students are introduced to a broad view of contemporary academic culture and develop a strategic understanding of how to conduct scholarship and research. With a focus on developing necessary writing and presentation skills, students develop a scholarly article for publication as a semester-long project.

HT2611 | DC Design Lab I

The initial design lab of the program examines the history of the European and American city. Theoretical topics are introduced examining the history of the urban grid and how property rights are defined relative to changing ideas of the ground in urban space.

HT2612 | DC Design Lab II

The second design lab of the program is structured as an open design research platform in preparation for the third and final design studio of the program. With a focus on contemporary problems of urban development, students develop a brief for design development in the third and final semester.

HT2613 | DC Design Lab III

The final design lab takes a close look at current problems in urban policy in relationship to global capital. Students acquire a critical understanding of how finance and policy interrelate to influence contemporary urban form. The design lab focuses on refining the arguments of the final design studio project relative to a more advanced theoretical foundation.

HT2711 | Advanced Architectural Studies I

This course develops a theoretical framework for what might constitute a program of advanced study in architecture. Research and scholarship has been difficult to define for architecture. In relationship to this difficulty, this course examines why this difficulty exists and advances some preliminary propositions for what might constitute innovative forms of architectural research and scholarship. The course addresses the various topics represented in the postgraduate programs at SCI-Arc EDGE and is an open platform for debating and cross-fertilizing the projects that are being developed in the various programs of study. Students individually or in teams develop a research proposal for development in the subsequent semester.

HT2712 | Advanced Architectural Studies II

Building on the theoretical content of Advanced Architectural Studies I, students develop their research proposals from Advanced Architectural Studies I throughout the semester. The course culminates in a postgraduate colloquium presenting the results of the individual research projects.

Recurring History + Theory electives

Please note that these courses are not offered every semester and are subject to change. Check the latest course schedule for current course offerings, and visit my.sciarc for each semester's course descriptions.

HT2503 | Mixed Realities: VR Begins in the Mind's Eye Michael Rotondi

We are embedded in a world we inherit and immediately respond and adapt; but most significantly we begin to imagine how to re-construct this world. Improving one's ability to see-know, visualize, and interpret the world in constructive ways is a great asset. Our focus will be to best understand these processes by thinking and making by moving back and forth between virtual reality and visual imagination.

Virtual reality begins in the mind's eye. Visual perception refers to the brain's ability to make sense of what the eyes see. Visual imagination refers to the brain's capacity to synthesize fragmented sensory images into a coherent whole. Visual Imagination is fundamental to the creative process.

Visual Imagination grows from our spatial intelligence, which is dependent on the depth and quality of our spatial memory. Spatial memory is a cognitive memory map of direct experience as our bodies move through time and space. Spatial Memory, Spatial Intelligence and Visual Imagination are interdependent. In order to cultivate visual imagination, we will shift our focus away from academic research concerns to architectural concerns, especially its source code: virtual reality. In an academic setting information is systematically researched and exchanged in highly analytical and historically considered conventional ways. It is assumed here that this more structured way of knowing can be enlarged to encompass the lived human experience and its inherent creative possibilities.

This seminar is not about how we know what we know, Instead it is how to access what we know and convert it into conceptual structures that serve our Visual Imagination.

HT2588 | EA_WE_ST
Russell Thomsen

As a nascent art form in the early 20th century, film represented a radically new medium of visual expression throughout the world. While filmmakers in the west developed the cinema as an extension of photography, those in the east saw it as a logical extension of the theatre. While they shared in the exploration of rapidly evolving techniques unique to the medium, they were driven by radically different views of nature, time and space. Western culture championed notions of rugged individuality, technology as a means to conquer a savage, natural world and an aesthetic of machined perfection and linear time. In contrast, eastern culture explored themes reinforcing the sublimation of individual desire to the larger welfare of the collective, the role of humans as an integral part of the natural world, and an aesthetic that embraced transience, imperfection and space.

Over the course of the semester we will explore these differences in selected films for their respective contents, themes and techniques. From the black and white period dramas of Kurosawa and Ozu to the contemporary animations of Miyazaki and Oshii; from the dream-like documentary of Godfrey Reggio to the multiple realities of Christopher Nolan, we will seek to understand film as a means to communicate cultural content and very different world views, and how those differences may in fact be collapsing in a contemporary world that blurs all boundaries.

HT2501 | The Man From the Country Where No One Else Lives (Part 2)
Eric Owen Moss

Life is personal – not interchangeable.

Evaluation of various characters in the architecture adventure with respect to surrounding cultural and intellectual venues over millennia that might begin to account for the content of their work, and allow students to utilize, extend, adjust, and include those meanings in their own design efforts.

HT2514 | Scenes From a Film that Does Exist
Liam Young

Our perception of the world is largely shaped through stories. Our political positions are informed by fake news, we live out our lives in the pixelated territories of video games and we escape into the pages of a novel or the flicker of the movie screen. An increasingly complex world is sometimes best understood through the stories we tell about it. Such Fictions play a significant role in the construction and understanding of space and in this way storytelling can be considered a critical act of architecture.

In this seminar we will tour the landscapes of video games, graphic novels, journalism and films as we explore the relationship between site and story, geography and the imaginary. We will examine how spaces are designed and visualized in the mediums of fiction and consider fiction as a critical site for architecture and design. In hoax news and conspiracy theories, scripts and novels, games and films we will see the politics, uses and roles of fiction and study the techniques of narrative structure, and structures in narrative.

The semester is organized as an expedition through the geographies of fiction and each week we will visit an imaginary site, building or city. In preparation for each class you will read an excerpt, play a game or watch a film and contribute to discussions on the strategies and tactics employed in each example. We will read stories as a way of reading the world.

HT2548 | 100 Buildings Everyone Should Know
Eui-Sung Yi

The 20th century marked a most remarkable period in architectural history. Perhaps rivaled only by the 12th century of the Gothic Period and the 15th century of the Renaissance, the 20th century revolutionized architecture development as traditional notions of space, technology and theories were radically challenged and re-invented through complex and radical redefinitions in global forces of politics, social values, and economics. Knowledge of this period is critical for any students of architecture. To amass for such an awareness campaign, this project asked over 30 internationally well-known architects for their list of projects they would teach students. This seminar surveys the top 100 “must know” works of architecture designed and built between 1900 and 2000. This list biases projects

that demonstrate fundamental formal, spatial, technological and organizational systems as a response to a variety of programmatic and social issues rather than its role in a larger historical or cultural narrative.

HT2713 | Maquilopolis: Tijuana and The Ritual of Making **Rene Peralta**

The course focuses on genres of production as they affect the historical and future scenarios of the border city of Tijuana, Mexico. The research will describe “production” as a socio-cultural, economic and urban stimulus still thriving in a post-industrial world.

During the semester we will focus on the acts of producing and making as “rituals” that have been instrumental in the production of texts and ideas, landscapes and buildings, art and politics that have made of this border city a contested landscape.

Our research protocols are the disciplinary instruments (texts) of architecture and landscape urbanism, which allows us to succinctly construct arguments that deal with ecology, infrastructure, urbanism and mapping. We will be examining: labor and immigration flows, political jurisdictions and borders, binational trade treaties, capitalist means of production, and other themes related to the social impact of thinking and making at an urban scale.

APPLIED STUDIES

Architecture is about the way we make worlds, worlds populated with subjects and objects, the definitions of which are always mediated by their cultural significance. Embedded in that act of “making” as the transposition and materialization of abstract ideas into spatial form, is the conception of technology as the necessary means by which that complex process takes place. The continuous definition and challenge of the multiple ways we make the world and its physical environment constitute the fundamental motivation of the Applied Studies program at SCI-Arc. The program offers a range of courses that critically engage technology and its spatial and social consequences. Foundation courses are offered in Physics and other sciences, building systems, structural analysis, tectonics, material development, acoustics, lighting and environmental control. Advanced courses explore the design consequences of the continued material and technical development of architectural proposals in the physical world. Elective courses offer the unique opportunity to further research and experiment with highly specific technologies that constantly redefine the conventions of architecture as a discipline and as a practice. Recent courses explore topics as diverse as parametric design, structural optimization, advanced geometry, composite tectonics, material research and development, complex assemblies, advanced robotics as well as ecology, biomimicry and solar performance.

Core Applied Studies seminars **B.Arch**

AS3020 | Environmental Systems I

This course is intended as an introduction to environmental systems in architecture. Beginning with an understanding of basic thermodynamics and climatic conditions, the course will use architectural precedents to examine the fundamental issues of passive energy systems as they apply to architectural production and performance. Students will learn the physics of the building environment, basic environmental conditions and human comfort. Particular attention will be paid to issues of sustainability. Design strategies that leverage careful site analysis in order to inform building location, orientation, massing and geometry will be thoroughly discussed. Significant historical, cultural, theoretical, and technological developments in environmental engineering will also be discussed. Finally, contemporary simulation technologies will be introduced as a tool for design and the application of concepts covered in the course.

AS3021 | Structures I

This course introduces students to statics and mechanics of materials. These subjects provide a basis for understanding how a structure supports itself and its occupants. Students will also explore strength of materials, i.e. how materials fail. Students will become familiar with analytical methods for finding equilibrium of forces, evaluating material stress and strain, and determining the conditions of stability. Significant historical, cultural, theoretical, and technological developments in structures will also be discussed.

AS3030 | Structures II

This course provides students with a basic understanding of the engineering principles governing gravity, framing systems and lateral load resistance within buildings. By first examining the underlying mechanics of these systems and later reviewing real world examples, this course sheds light on the creative application of these principles. The concept of structural loads – both gravity and lateral loading – will be defined both in the context of physical phenomena and according to Building Code requirements. This course will also include an introduction and precedent comparison of various structural theories across the history of architectural discourse, including debates concerning structural representation and expression or obfuscation, performance, systems convergences and divergence, and the complex relation between architecture and engineering.

AS3031 | Environmental Systems II

This course focuses on advanced building systems and technologies with a special emphasis on environmental systems, sustainability, performative architecture, and integration of building systems. The content includes generative and active building environmental systems and design strategies and their integra-

tion and optimization with the building site, orientation, and envelope/façade, in relationship to renewable natural resources and occupant needs. The seminar also covers building systems and services such as plumbing, electrical, fire protection, vertical transportation, security and building management systems; focusing on architectural considerations and overall systems integration. Through a series of lectures, software tutorials, assignments, student presentations, quizzes and exams, advanced systems, design strategies and architectural precedents will be explored and critically analyzed using various qualitative and quantitative techniques including benchmarks/rule-of-thumbs, prescriptive (building codes and standards), and dynamic building performance simulations. This course will also include an introduction to various environmental systems theories and a study of these ideas through precedent analysis.

AS3033 | Tectonics and Materiality

This course focuses on tectonics (predominantly building envelopes) and performance (largely consisting of technical, technological, cultural, and environmental dimensions). Working in groups throughout the semester, students analyze and document a precedent in order to formulate a series of hypotheses in an attempt to construct a number of interrelated tectonic conjectures. In scrutinizing building assemblies, the class will attempt to position construction analysis so as to produce both technical knowledge and critical awareness of embedded cultural habits. The class will thus seek out an alternative understanding of the tectonics, one that not only mirrors the realm of construction – materials, methods, sequences, tolerances, etc. – but also embraces architectural processes of expression, encompassing issues of geometry and technique; posture and character.

AS3040 | Design Development

This course is taught in conjunction with the 3B “comprehensive design studio”. The course investigates issues related to the implementation of design: technology, the use of materials, systems integration, and the archetypal analytical strategies of force, order and character. The course includes a review of basic and advanced construction methods, analysis of building codes, the design of structural and mechanical systems, environmental systems, buildings service systems, the development of building materials and the integration of building components and systems. The intent of this course is to develop a cohesive understanding of how architects communicate complex building systems for the built environment and to demonstrate the ability to document a comprehensive architectural project and stewardship of the environment.

AS3041 | Advanced Construction and Project Delivery

The rapid development of digital technologies and the intertwinement of design and construction processes present an opportunity to develop a new approach to project delivery. The course responds to this opportunity by taking on the ques-

tion of advanced digital architecture, which is considered by many to represent for the information age what modern architecture represented for the industrial age. Advanced digital architecture demands digitally-based integrated building models that realign the traditional relationships between project stakeholders. The primary objective of the course is to teach construction documentation in the context of the contemporary methods of multiple-platform project delivery, including building life-cycle costs and integrated business practices.

AS3050 | Professional Practice

Architecture is a comprehensive field of practice existing within dynamic, social, organizational, economic, professional and cognitive contexts. The course aims to equip students with the knowledge, skill and judgment needed to fit an architect for his/her professional duties, and to understand how an office organization and a design project are managed for this purpose. This course focuses on the organizational and managerial issues to carry an architectural design from concept to implementation. It explores principles and concepts essential to managing projects applied to a variety of design and project delivery cases. Each class contains a case study that describes the real experience of practicing architects and project teams. Cases focus on specialized practice; the role of the architect in new forms of project delivery; resolving design conflicts between the community, project team and the client; collaboration; making contractors perform; working in another country; the use of new technology in design and management. This course will also give an introduction to the following professional guidelines and organizations: APA, ARE, IDP, NCARB, CAB, and the AIA.

M.Arch 1

AS3100 | Materials and Tectonics

This class introduces students to fundamental structural principles with a strong emphasis on materials, material properties and industrial processes. This course is an investigation into the anatomy of material and its potential use in architecture. The goal of the class is to provide students with a thorough understanding of materials, and of the design methods, techniques, and industrial processes by which they acquire meaning in an architectural and building context. By means of direct testing and experimentation, the class explores technical and rational manipulations of traditional as well as novel materials, aiming to develop an expansive understanding of their physical nature, environmental impact and possible reuse.

AS3101 | Structures I

Taking a broad view of structural systems and materials, this course introduces students to the fundamental principles governing structure such as equilibrium, span, stiffness, and load path. The course looks at common building materials – wood, steel, concrete – and their mechanical properties to understand how and

when to apply these materials in construction. Through in-class examples and discussion, and homework assignments which include exercises in shear and bending moment diagrams and the calculation of equilibrium and internal forces, students develop a practical understanding of structural systems and these systems are deployed in building construction.

AS3120 | Structures II

This course aims to provide students with a comprehensive understanding of structural engineering and of the architect's role in the creative application of engineering principles. During the first part of the term, the class examines concepts and definitions of gravity framing systems. The latter half of the course introduces lateral loads and the structural systems used to resist those loads. The class introduces students to building code requirements pertaining to lateral load definition and lateral load-resisting systems.

AS3121 | Environment Systems I: Light, Air and Sound

This course introduces students with the basic physical principles, design implications and performance of environmental systems by focusing on the behavior of lighting, acoustical and climate modification systems within the built environment. The course relies upon the assumption that a careful integration of these elements within an architectural project, especially in the impact these elements have on building envelopes, can contribute significantly to improving the quality of our environment. Life-safety systems are also discussed, with a special emphasis on movement systems and egress. The class is divided into three independent modules, each of which addresses a single environmental system and is taught by a professional engineer specializing in the field.

AS3122 | Design Development and Documentation

This course focuses on construction systems, building technology, the use of materials and system integration. The course includes a review of basic construction methods, analysis of building codes including occupancy and life-safety issues, the design of structural and mechanical systems and familiarizes students with basic principles of sustainable design. Studio projects from the previous semester are developed, focusing on the detailed design of a zone of the building in terms of the resolution of its structural system and building envelope using three-dimensional modeling as well as drafting. Drawings at various scales are produced to introduce students to the language and standards of details, wall sections and overall building representations, culminating in a comprehensive package of drawings. The course also introduces student to the basics of cost control including lifecycle costs. Students receive the Emerging Professionals Companion along with updated Intern Development Program (IDP) information.

AS3123 | Environmental Systems II: Sustainability and Complex Envelopes

This course focuses on advanced building systems and technologies. With a special emphasis on high rise construction, students investigate issues pertaining to vertical movement systems, advanced structures and their relation to surface and building envelopes. The course also covers other building services such as plumbing, electrical, security and fire protection systems and their effects on architectural design. Through a series of lectures, group presentations and individual assignments, current typologies and specific architectural precedents are researched and discussed, with a special focus on glass, curtain wall systems, sustainable, energy efficient systems, and technologies of construction and assembly.

AS3130 | Practice Environments: Contracts, Liabilities and Business Models

This course critically examines the role of professional architectural practices in the development and direction of architectural design, production, and pedagogy. As its basis, the course comprises a survey of the architectural profession—its licensing and legal requirements, its adherence to the constraints of codes and budgets, and its place among competing professions and financial interests. Attention is placed on student's understanding of registration law, building codes and regulations, professional service contracts, zoning and sub-division ordinances, environmental regulations, and other licensure concerns. Students gain an understanding of the architect's administrative role and of issues relating to obtaining commissions, selecting and coordinating consultants, negotiating contracts, providing project management, and overseeing issues of egress, code compliance, and principles of life safety. They also develop the skills necessary to effectively communicate to clients and user groups. Trends such as globalization and outsourcing are analyzed in their capacity to substantially affect the practice of an architect. Students also receive the Emerging Professional's Companion along with updated Intern Development Program (IDP) information.

AS3140 | Advanced Project Delivery / Construction Documents

The course focuses on advanced methods of project delivery and construction documents incorporating digital technologies and investigating new models for linking design and construction processes. It introduces Building Information Modeling as one of the tools for realignment of the traditional relationships between the project stakeholders. Using their previous design studio project, a single or multi-unit residence, students will analyze and further develop the residential project by creating a detailed 3d digital BIM model and a set of 2d construction documents specifically tailored for the design challenges of the House. Lectures and site visits to fabricators and construction sites will further inform students of technical documentation methods for projects that are operating on the forefront of design and construction technologies to date.

M.Arch 2

See M.Arch 1 section for other core seminar descriptions.

AS3200 | Advanced Material Tectonics

This course looks at the new ability of architects to design, develop and produce structural assemblies for highly specific performances and applications. This course explores new material, as well as the integral manner in which building systems and structures are produced—from design idea to fabrication and erection—to precisely fit designers' specifications and to provide optimized performance.

AS3201 | Advanced Building Systems

This course introduces students to innovative methods of construction, fabrication, structuring and assembly enabled by the advent of new technologies. The class focuses on issues pertaining to structure and its relation to surface and building envelope, with an emphasis on the instrumental and conceptual shift from two-dimensional forms of representation and documentation, to three-dimensional systems based on material performance and force flow simulation and their consequent impact on architecture's relation to the building industry. Current typologies and specific precedents of architectural realization—and their integration of geometry and ordering systems with systems of construction and assembly—are discussed through a series of lectures, group presentations and individual assignments.

AS3222 | Design Development and Documentation

This course focuses on construction systems, building technology, the use of materials and system integration. The course includes a review of basic construction methods, analysis of building codes including occupancy and life-safety issues, the design of structural and mechanical systems and familiarizes students with basic principles of sustainable design. Studio projects from the previous semester are developed, focusing on the detailed design of a zone of the building in terms of the resolution of its structural system and building envelope using three-dimensional modeling as well as drafting. Drawings at various scales are produced to introduce students to the language and standards of details, wall sections and overall building representations, culminating in a comprehensive package of drawings. The course also introduces student to the basics of cost control including life-cycle costs. Students receive the Emerging Professionals Companion along with updated IDP information.

AS3230 | Practice Environments: Contracts, Liabilities and Business Models

This course examines critically the role of professional architectural practices in the development and direction of architectural design, production and pedagogy. As its basis, the course comprises a survey of the architectural profession—its licensing and legal requirements, its adherence to the constraints of codes

and budgets, and its place among competing professions and financial interests. Attention is placed on student's understanding of registration law, building codes and regulations, professional service contracts, zoning and sub-division ordinances, environmental regulations and other licensure concerns. Students gain an understanding of the architect's administrative role, and of issues relating to obtaining commissions, selecting and coordinating consultants, negotiating contracts, project management and issues of egress, code compliance and principles of life safety. They also develop the skills necessary to effectively communicate to clients and user groups. Trends such as globalization and outsourcing are analyzed in their capacity to substantially affect the practice of an architect. Students also receive the Emerging Professionals Companion along with updated IDP information.

AS3302 | Advanced Structural Systems

This course is a lecture class in structural engineering design of unconventional structures for architecture students. The course will examine how architectural form can be derived from force flow and load path. The class content includes the modern history of structural engineering and architecture, structural models, structures in nature and demonstrations of analysis techniques. Established structural systems such as longspan trusses, arches, vaults, membranes, shells, tension structures, space frames, folded plates, diagrids, pneumatics and cable nets will be studied through evaluations of built projects, current designs and class assignments. Different structural materials will be examined with an emphasis on making appropriate material choices for different structural systems and methods of construction. The course will focus on engineering fundamentals for quick evaluations of structural concepts to develop schemes. Physical models and sketching will be used extensively.

EDGE

AS2711 | AT Design Lab I

The initial design lab of the program is an intensive workshop in advanced technologies supporting the projects of the design studio. Technical skill is developed in relationship to SCI-Arc's production facilities with a focus on position developing new conceptual and technological problems of architectural representation

AS2712 | AT Design Lab II

The second design lab of the program is structured as an open design research platform in preparation for the third and final design studio of the program. With a focus on new concepts of assembly, students develop propositions for how an architectural object can be reconsidered relative to contemporary technological innovations.

AS2713 | AT Design Lab III

The final design lab of the program focuses on technologies of advanced automation and its implications for designed objects. Students develop projects incorporating the advanced techniques mastered during the program.

Recurring Applied Studies electives

Please note that these courses are not offered every semester and are subject to change. Check the latest course schedule for current course offerings, and visit my.sciarc for each semester's course descriptions.

AS2509 | Details, Details

Dwayne Oyler

This course is an investigation into the future of the architectural detail. Beginning with the question, "what is an architectural detail today?", the course will first consider a range of accepted definitions- from the architectural motif (perhaps best exemplified by the Gothic), to the tectonic expression of a structural logic (Prouve, for example), to the autonomous architectural device (from Scarpa to early Morphosis). A number of contemporary architects, from Ben Van Berkel to Zaha Hadid have suggested that the relevance of the architectural detail has faded in favor of more subservient part to whole relationships.

There is no denying that, given the simultaneous technological advancement and material development of our era, the idea of seamless continuities are on the horizon (if not at our fingertips) at least from the standpoint of constructability. But, is that really the best we can do? Or might the future of the architectural detail lie in a more nuanced approach that draws from a wider range of definitions?

Drawings from various positions on the topic, students will design a detail for either a contemporary UNBUILT project (for example, Greg Lynn's Embryological house or Scott Cohen's Torus house) or a contemporary project where they may not have gotten it quite right (take the "window" at the Broad Museum, for example). Deliverables for the class will include drawings and an impeccably constructed half scale architectural detail (imagine a handrail/guardrail, a window sill, a stair riser).

AS2507 | Habitat for Humanities

Darin Johnstone

An unprecedented collaboration between SCI-Arc, Habitat for Humanity of Greater Los Angeles (Habitat LA), and the County of Los Angeles, the SCI-Arc/ Habitat LA Housing Project tackles innovative ways to redevelop neglected properties in LA and positively impact the communities they exist within. Over the course of the past academic year, students in the Habitat design studios came up with a proposal for a cost-effective single-family home with a focus on innovation, affordability, home-healthy building materials, and sustainability. The 2014 fall

semester was devoted to the student design of the home. The 2015 spring semester was devoted to design development, design documentation and permitting. During the summer semester the students performed construction administration and joined Habitat LA's volunteer structure to help construct the project.

Once the home is complete, it will be transferred to a low-income family in Los Angeles through Habitat LA's established housing program. Supported by its long term conception, the program's goals are not merely to build individual homes, but also to make a meaningful impact on the urban scale.

AS2494 | Introduction to Robotics

Crume Batliner

Always wanted to walk through a city built exclusively of avant-garde architecture. Ever wondered how it would look like if your city was only build by you and your colleagues. Always dreamed to be an actor in your own architectural fantasy In this intro to robotics workshop, we will transform the SCI-Arc robot house into a film set and use robots to make this dream reality.

This workshop will teach you how an industrial robot works. You will learn how to use Autodesk Maya to control cameras and lights using industrial robots as motion-control system. You will learn how to use perspective and relative motion of objects in your favor to create the illusion that people and objects of different scales live in one and the same image reality. You will learn how to create matte plates using green screens and how to composite everything into one single shoot. You will composite a music video.

AS2420 | Fluid Formworks

David Ross

Fluid Formworks is an exploratory applied studies seminar that aims to develop and test the production of surface-to-volume constructions using robotic contouring. Our work will be conducted in the SCI-Arc Robot House, expanding on a technique called incremental sheet forming (ISF), or more specifically, single point incremental formation (SPIF), a free-form sheet metal rapid prototyping process.

This research approaches geometric definition through sequential form drawing, where toolpaths are designed in relation to material resistance, sheet deformation/stretching limits, and robotic work spheres. This strategy reconsiders the role of a digital master model, as traditionally understood in digital fabrication, in favor of an alternate 2d-3d direct encoded contour construction.

AS2422 | Flexible Structures

Alexis Rochas

During the course of the semester, students will examine adaptive structural systems, construct and manipulate complex data structures and create an interactive platform weaving 2d, 3d and 4d information streams in an effort to map innovative performances, chart alternative structuring devices and stake new territories for architectural development. The seminar will include site visits to local production venues and round table discussions with designers and performers.

AS2514 | The Representational Object

Peter Testa

The seminar will explore the limits of architecture's representational possibilities linked to the emergence of new imaging technologies. The two-part course is organized between a theory seminar examining the shifting hierarchy of image, object, and matter in contemporary discourse; and a short visualization project focusing on restaging conventional techniques of architectural representation in SCI-Arc's Robot House.

Rethinking representation after "correlationism" the seminar takes as its central topic the transformation of vision, imaging, and cognition. In this new design paradigm Machine Vision is an agent of transformation moving beyond instruments of production to a new architecture of seeing shape and form. This new machine ecology has the potential to mutate definitions and understanding of the visual and architectural knowledge. These techniques make possible in effect to "see oneself seeing". Vision is now an activity beyond and outside the human subject – a product emerging from the realm of machines and apparatus of capture – one that retroactively conditions and manufactures "human" vision. By defamiliarizing the ways in which images and objects are constructed and perceived; positioning the viewer in unexpected discourse with foreground and background, form and space, objecthood and artifice, these new optical regimes have the potential to provoke new aesthetics and themes for architecture and art practice.

AS2515 | Robotic 3D Printed Furniture

Casey Rehm

Students will explore how alternative forms of intelligence can be utilized to produce innovative additive fabrication processes. These intelligences will range from the material to the digital, with tutorial and lectures focused largely how to develop interfaces for these inhuman entities and how ideas of automation coupled with developments in AI are reshaping production, architecture, and capitalism.

Specific software covered in the course will include Processing for fully autonomous, machine vision driven, fabrication behaviors; interactive VR environment

development with Unity for realtime robotic control; and Grasshopper for robotic simulation and discrete element substitution.

Unlike previous seminars related to these techniques, students will focus less on expertise in software development and more on the ultimate design project/material issues. Each student group will produce a 8' furniture scale object using additive manufacturing. The object should exhibit how these external intelligences create emergent, generative, and novel forms as well as literal material and performative adequacy. This exercise will look to develop contemporary language of automated production and how automation will reshape the architectural environment.

AS2761 | Digital Projects: Parametrics and Intuitive Modeling

Kerenza Harris

In architecture practice today, performance is one of the most important factors in the design and delivery of a project. The creation and use of parametric/intelligent digital modeling—models that integrate and respond to performance criteria—offers a more global, holistic approach to design, allowing architects to anticipate and accommodate issues of collaboration, fabrication and installation.

This course aims at giving students computational tools to facilitate the practical implementation of performance goals in every day practice and allow them to seamlessly integrate parametric intelligence into their existing, more intuitive design processes. Using Digital Project, one of the most powerful and widely used platforms in the industry, students will learn to incorporate performance data early in their design process while maintaining the flexibility of design iteration/ideas.

AS2516 | SuperProsthetics

Herwig Baumgartner

Superprosthetics is a seminar that involves the designing and prototyping of performance enhancing prosthetic limbs. It focuses on full scale prototyping in the Robot house, utilizing the robotic arm and our brand new plastic extruder. Architectural practice has been ever expanding into a variety of different fields; Architectural graduates are no longer tied exclusively to career paths working in an architecture office or opening an architectural practice, but are increasingly involved in all aspects of design; including graphic design, product design, the movie industry and advanced digital manufacturing. This seminar is expanding the architectural playground even further and focuses specifically on product design with a strong SCI-FI narrative by designing performance enhanced prosthetics or Superprosthetics. Think superheroes, Cyborgs, and bionic implants. Students will work on developing different techniques working with a high speed, high strength plastic extruder and a robot arm to produce full scale prototypes of their Superprosthetic designs.

AS2578 | Energy Fabrication Workshop

John Bohn

This is an advanced research course on energy and its behaviors. Specifically, it is a laboratory for the fabrication of specific architecture features using energy as the primary medium. Students will be introduced to the architectural discourse surrounding energy and its behaviors as well as architecture's relationship to those behaviors in the past, present and future. We will produce viable energy features (dissipative structures) that demonstrate the possibility of a new energy-first vocabulary for architectural production. It will include the use of digital tools to measure, simulate and represent thermodynamic behaviors and for the design and fabrication of specific energy features in a laboratory environment.

VISUAL STUDIES

The Visual Studies concentration is a defining feature of the SCI-Arc pedagogy. The famously elaborate drawings, models, renderings, and animations produced by our students and faculty reflect not only the ability to technically document and visually communicate a building's design, but also a deep and long-standing interest in employing these tools as generative creative media. Visual Studies gives students both professional competency and a means for creative speculation. Through exposure to this dual capacity of architecture's tools, the students are introduced to an evolving tradition of creative techniques.

In the core Visual Studies sequences, great emphasis is placed on the development of contemporary technical expertise and visual acuity. Through in-depth instruction in the use of advanced software, both undergraduate and graduate courses teach students the skills and tools to precisely determine and compellingly represent complex three dimensional geometric constructs, and to apply these constructs to building projects. In addition to the direct application of this expertise by students in their Design Studios, there are also opportunities to explore and expand these skills via advanced elective Visual Studies courses and workshops led by architects and other creative professionals.

Core Visual Studies seminars

B.Arch

VS4011 | Visual Studies I

Visual Studies I introduces the mechanics and principals of two and three-dimensional geometry, both as descriptive and transformative operations. It introduces basic tools and operations in two and three-dimensional software and places all these operations within the context of the role of drawing in the culture of architecture. The exercises move from general geometric transformations to the precise translation of them into models and orthographic views thereby placing them within the conventions of plan, elevation, section, and other architec-

tural projections. As with other required Visual Studies courses, there is some coordination with the topics and needs of the concurrent design studio. However, it is also considered to be an independent sequence with its own logic and progression from course to course. Lectures, tutorials and readings cover both technical drawing questions and provide an introduction to important drawings in architecture and art.

VS4020 | Visual Studies II

Visual Studies II expands on the tools and techniques introduced in Visual Studies I and introduces new software and a more expanded consideration of studio technique beyond the conventions of drawing. Advanced solid modeling in Rhino and an introduction to polygon modeling in Maya also serves to introduce students to a wider range of non-classical, spline based geometries and their transformations. Where Visual Studies I introduces the legacy of drawing within the culture of architecture, this course - through lectures, tutorials, and readings - reviews the status of drawings and the move to other, less conventional creative outputs.

VS4021 | Visual Studies III

Visual Studies III culminates the technical sequence of required Visual Studies courses. The course introduces scripting-based tools (currently, Grasshopper for Rhino) as well as advanced rendering and animation tools. As the need for, and definition of, advanced tools changes rapidly, the exact composition of the tools and techniques covered will evolve from year to year. In every case, it will include a rigorous introduction to scripting (a pre-modeling tool) and a set of post-modeling tools for the advanced representation of projects. Lectures and readings will place these representational tools into the contemporary discourse on the status of representation and abstraction in architecture.

VS4030 | Visual Studies IV

Rather than have a specific curriculum, this course offers four topically different sections taught by four different instructors. In this way the school emphasizes its longstanding commitment to architectural speculation via drawing and other generative tools, and prepares students for the 'vertical studio' lottery process the following semester. These sections are led by faculty, and on occasion by special visitors. Each semester there is also an informal symposium of all four sections in which the various topics are discussed relative to one another and to the relation of such advanced studies to the discipline of architecture. Visual Studies IV is only open to advanced students.

M.Arch 1

VS4100 | Visual Studies I

The 1GA Visual Studies course is structured as an introduction to forms, methods, conventions and approaches to architectural drawing and representation. Architecture necessarily presumes three-dimensional form and, in particular, material thicknesses. Students will attain familiarity with descriptive geometry, which allows the visualization, analysis and production of complex three-dimensional forms and intersections. Beginning from the fundamentals of orthographic projection, the course sequentially examines sections and cut drawings, oblique and axonometric projections, and various types of curvature, from simple to complex, in both two and three dimensions. Students will be required to constantly work between the construction of drawings and the construction of physical models, gaining familiarity with the constraints and advantages of each. This course is directly coordinated with the 1GA and 1GB Studios in order to provide students with tools and techniques that they will use in those courses.

VS4101 | Visual Studies II

This course forms the continuation of Visual Studies I. It expands on the use of representational tools to emphasize formal legibility through systems of regulation, annotation and scripting. The assignments focus on building precision and intentionality toward architectural drawing and modeling, and developing a critical sensibility to the inherent bias in each medium of representation.

VS4120 | Visual Studies III

This course provides an introduction to advanced techniques in modeling and fabrication processes by focusing on digital drawing and production tools that enable the development of complex and dynamic surfaces, procedural and parametric forms, and the development of the relationship between architecture and geometry. Projects include prints of digital models using CNC and laser-cutter devices.

VS4121 | Visual Studies IV

Visual Studies IV offers students a selection of courses that focus on advanced techniques of representation, simulation, and visualization. Please note these courses are not offered every semester and are subject to change. Check the latest course schedule for current course offerings, and visit my.sciarc.edu for each semester's course descriptions.

M.Arch 2

VS4200 | Visual Studies I

The course will cover issues of contemporary representation and the development of splines in relation to complex digital form and physical and virtual space. Visualization today encompasses the development, exploration and communication of information and ideas in multiple mediums. The course will engage recent techniques related to splines, gesture interfaces and virtual reality. The course will develop critical visual literacy and review methods for generating and evaluating lines, surfaces and volume. Modes of drawing and modeling in three dimensional space, including the importance of precision and abstraction will be reviewed. Exercises and associated tutorials provide opportunities to discover novel concepts through transformation and tactical workflows.

VS4200 | Visual Studies II

Visual Studies II offers students a selection of courses that focus on advanced techniques of representation, simulation, and visualization. Please note these courses are not offered every semester and are subject to change. Check the latest course schedule for current course offerings, and visit my.sciarc.edu for each semester's course descriptions.

EDGE

VS4211 | FE Design Lab I

The initial design lab of the program is an intensive workshop in narrative media workflows. Students acquire necessary technical skills supporting the development of the design studio project.

VS4212 | FE Design Lab II

Continuing the development of narrative media workflows, advanced techniques are introduced. Guest speakers from Los Angeles' media industries supplement the development of advanced media skills.

VS4213 | FE Design Lab III

The final design lab of the program looks ahead to how careers in media are developed. Students are introduced to industry methods and acquire an understanding of how successful project proposals are structured and developed.

Recurring Visual Studies Electives

Please note that these courses are not offered every semester and are subject to change. Check the latest course schedule for current course offerings, and visit [my.sciarc](http://my.sciarc.edu) for each semester's course descriptions.

VS2564 | Models from Pictures, Pictures of Models**Anna Neimark**

This seminar will perform a two-way exchange between pictures and models. First, we will explore methods for producing physical models based on the information we gather from such flat surfaces as photographs, drawings, and paintings. Studying a few architects who have imagined space through the close reading of abstract images—say, John Hejduk’s analysis of Piet Mondrian’s paintings, or El Lissitzky’s room based on his Proun paintings—the class will define techniques for making physical models. Rather than art, however, the subject of this modeling exercise will be the proto-architecture of dolmens, that is the form of these so-called “rude stone monuments.”

VS2594 | Digital From the Digital, Rendering out the Analog**Devyn Weiser**

Since Evans’ essay published in 1989, drawing and rendering in architecture have become increasingly automated through computer graphics procedures — directional projection, clipping planes, photorealistic rendering, and so on. Questioning the sufficiency of digitality, the seminar introduces and explores techniques of representation that shift established hierarchies between the geometric and stereometric, the image and object.

VS2596 | Coloring Book**Elena Manferdini**

The first part of the seminar is a survey designed to help students understand and specify colors in a digital environment. The class will give a general introduction to the various conventions that represent the computer RGB color mode of the screen. In particular, the class will focus on the HSB system, a cylindrical-coordinate representations of points in an RGB color model that describes colors (hue or tint) in terms of their shade (saturation or amount of gray) and their brightness (value or luminance). The task chosen for the class is the discovery of color theory specific to the digital environment departing from Albers color interactions and using scripting in Processing.

After becoming familiar with the potential processing and color interactions, the class will take traditional painterly techniques from the Renaissance (like chiaroscuro, cangiante, sfumato, controluce) and translate them into digital environment without the aid of a figure, nor texture, nor material. Depth and shadows will be obtained only through color arrangements.

The students will be asked to produce flip-books using only stacked colors, gradient scale, background and frame as element to work with.

VS2595 | Film Space**Ryan Tyler Martinez, Matthew Au**

The objective of this seminar is to provide students with intellectually informed, hands-on instruction in the practice of filming techniques within the context of the SCI-Arc Robot House. This course is founded on the belief that film is one of many fundamental forces within SCI-Arc, and that one of the primary standards by which students and faculty are judged is the quality, creative freedom, critical insight, and formal and technical innovation of the projects they produce. This course is focused on a bottom-up design approach. Its primary goal is to help students develop an understanding of cinematography tools and techniques for representation and documentation purposes.

VS4300 | Coding Form**Satoru Sugihara**

This course explores techniques of computational design technology and techniques using Grasshopper with various add-ons. Participants should be already familiar with 3D modeling in Rhinoceros. The course provides knowledge and skills of techniques in 2D pattern making, surface panelization and structure modeling with LunchBox add-on, parametric subdivision modeling with Weaverbird add-on, physics simulation with Kangaroo and scripting with Gh-Python add-on. Participants learn not only each techniques with specific tools but also understanding of mathematical aspect of geometry and vectors, and hierarchical data relationships in parametric design, basic understanding of procedural and object-oriented computer programming, conditioning and repetition in coding, single and multi-dimensional array data structure and logical way of thinking in computational design. For the final review, students work on a project to generate highly complex geometry to pursue aesthetic qualities in contemporary geometric complexity by the techniques of recursive coding and polygon mesh subdivision.

VS2618 | The Poetics of Conjugate Objects**Coy Howard**

The seminar will focus on developing the skills set required to master the marrying, blending, fusing, and/or juxtaposing of the attributional qualities of paired distinct things to evoke higher order thirdness – conjuring multiplication from addition.

Specifically we will be working in two dimensional imagery, texts, three dimensional objects, and planar surfaces.

VS2569 | Familiar Form**Florencia Pita**

This class will investigate the lineage of ready-mades (objet trouve) as a body of research that originated in the art world and has permeated to architecture. Indeed, instead of investigating architecture's earlier forays into historical familiarity, the 80', we will dwell onto contemporary notions of familiar figures and their versatile maneuvers of digital geometries. The images above, by Chippendale and Hockney, take two very familiar objects and flatten them by means of the medium of representation: drawing and photography. In this class we will look at objects with delineated volumes and will convert them to flat panels. These panels will aim at maintaining the allure of the familiar forms and their sense of volumetric mass by producing a texture relief (CNC milling) and an image imprint (offset printing and vacuum forming). These 'flat' models will oscillate between the realm of representation and object making.

VS2572 | Deep Form: One Two Punch**Kristy Balliet**

The course will cover issues of contemporary representation techniques by prioritizing the development of volume rich interiors. Volume will be explored in relation to complex digital form and developed between physical and virtual space. The workflow will rely on design agility and decisions made in rapid succession across multiple mediums in order to subvert convention. The seminar will focus on the architectural topics of gesture, projection, and volumetric layering to create interiors larger than their exteriors. A concept of fullness will be explored through a designed contamination between three dimensional drawing, flat modeling and virtual reality. We will challenge convention by drawing on edges, modeling the in-between and stepping in and out of reality.

VS2570 | Cinematic Models**Alexey Marfin**

In this studio we will create short filmic pieces, using techniques from cinema for working with models. We will take existing physical models produced in your other studios this year and treat them not as singular objects, but rather as cinematic and narrative spatial conditions.

We will use cinematographic techniques for lighting and shooting models, learning how to work with lights, cameras, and lenses to control the perceived spatial qualities of a physical model. We will also work in post-production, using 3D camera tracking to further develop the design of the model, working in between the digital and the physical. Finally, we will learn simple color grading and editing techniques to assemble our shots into short narrative pieces that take us on journeys through the spaces.

SCI-ARC COMMUNITY DESIGN PROGRAM

Since moving to downtown Los Angeles, SCI-Arc has sought opportunities to engage various local communities by spearheading a number of tactical, action-based projects, which enable students to collaborate directly with community agencies and undertake design/build projects. Each project deals with some form of practical and urgent problem solving circumstance. This might involve the creation of built structures or functional implements, or the imparting of vital skills to community members or at-risk groups.

Drawing upon the professional expertise of architects, urban planners, computer designers, visual artists, social scientists, cultural theorists, and others, SCI-Arc faculty and students have demonstrated a powerful capacity to impact specific social problems, working with intentionally short lead-times and reacting quickly to address immediate conditions. Whether coordinating with local government, city or community agencies, private industry,

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