THE IRWIN S. CHANIN SCHOOL OF ARCHITECTURE OF THE COOPER UNION
First Year Schedule
Spring 2021

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9AM	**Texts & Contexts** HSS2 Section K 9-9:50AM see Hum sched 3 credits	**Texts & Contexts** HSS2 Section E 9-9:50AM see Hum sched 3 credits	**Texts & Contexts** HSS2 Section K 9-10:50AM see Hum sched	**Texts & Contexts** HSS2 Section N 9-9:50AM see Hum sched	
	Representation II ARCH 117B 10AM-1:50PM Jefferson Lowder online 3 credits	**Concepts of Physics** ARCH 106 Kreis 10-11:50AM online 3 credits	**Texts & Contexts** HSS2 Section D 10-11:50AM see Hum sched 3 credits	**Concepts of Physics** ARCH 106 Kreis 10-10:50AM online	**Texts & Contexts** HSS2 Section E 10-11:50AM see Hum sched
				Texts & Contexts HSS2 Section D 11-11:50AM see Hum sched	**Shop Tech** FA 100RB 1-2:50PM online 1 credit
2PM	**Texts & Contexts** HSS2 Section N 3-4:50 see Hum sched 3 credits	**Architectonics** ARCH 111B 2-5:50PM Lowder Jefferson Montes de Oca O'Donnell online 4 credits	**Hist Arch I** ARCH 115B Zuliani 2-4:50PM online 3 credits	**Architectonics** ARCH 111B 2-5:50PM Lowder Jefferson Montes de Oca O'Donnell online	

The following sections of Texts & Contexts do not fit into the First-Year Schedule:

HSS2 Section A M 9-9:50, T 10-11:50 (conflicts with ARCH 106)
HSS2 Section B M 10-11:50, W 11-11:50 (conflicts with ARCH 117B)
HSS2 Section C M 11-11:50, W 12-1:50 (conflicts with ARCH 117B)
HSS2 Section F T 3-3:50, W 12-1:50 (conflicts with ARCH 111B)
HSS2 Section G T 4-4:50, W 4-5:50 (conflicts with ARCH 111B, ARCH 115B)
HSS2 Section H M 1-1:50, W 10-11:50 (conflicts with ARCH 117B)
HSS2 Section I W 2-2:50, F 2-3:50 (conflicts with ARCH 115B, FA 100RB)
HSS2 Section J W 3-3:50, F 12-1:50 (conflicts with ARCH 115B, FA 100RB)
HSS2 Section L M 10-11:50, W 11-11:50 (conflicts with ARCH 117B)
HSS2 Section M T 10-10:50, Th 10-11:50 (conflicts with ARCH 106)

THE IRWIN S. CHANIN SCHOOL OF ARCHITECTURE OF THE COOPER UNION
Second Year Schedule
Spring 2021

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9AM	Mod Context HSS4 Section J 9-10:50AM see Hum sched 3 credits	Mod Context HSS4 Section A 9-10:50AM see Hum sched 3 credits	Mod Context HSS 4 Section J 9-9:50AM see Hum sched	Mod Context HSS 4 Section A 9-9:50AM see Hum sched	
					Hist Arch II ARCH 125B Kogod 10AM-1:50PM online 3 credits
	Mod Context HSS4 Section D.E 10AM-12:50PM see Hum sched 3 credits	Mod Context HSS4 Section G 11-11:50AM see Hum sched 3 credits	Structures I ARCH 122B Palacio 11AM-12:50PM online 2 credits	Environments ARCH 124B Iturbe 11AM-12:50PM online 2 credits	
2PM	Representation IV ARCH 127B Rowen Young 2-4:50PM online 3 credits	Design II ARCH 121B B.Young Aranda Vanable 2-5:50PM online 5 credits	Design II ARCH 121B B.Young Aranda Vanable 2-5:50PM online	Design II ARCH 121B B.Young Aranda Vanable 2-5:50PM online	Mod Context HSS 4 Section G 2-4:50PM see Hum sched 3 credits
	Mod Context HSS4 Section I,L 6-8:50PM see Hum sched 3 credits				

The following sections of THE MODERN CONTEXT do not fit into the Second-Year Schedule:

HSS4 Section B W 9-10:50, Th 11-11:50 (conflicts with ARCH 124B)
HSS4 Section C M 3-3:50, W 11-12:50 (conflicts with ARCH 127B)
HSS4 Section F Th 10-12:50 (conflicts with ARCH 124B)
HSS4 Section H W 10-12:50 (conflicts with ARCH 122B)
HSS4 Section K T 2-4:50 (conflicts with ARCH 121B)
HSS4 Section M T 2-4:50 (conflicts with ARCH 121B)
HSS4 Section N T 2-2:50, Th 9-10:50 (conflicts with ARCH 121B)

THE IRWIN S. CHANIN SCHOOL OF ARCHITECTURE OF THE COOPER UNION
Third Year Schedule
Spring 2021

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9AM		**Intro Urban Hist/Th** ARCH 133 Atak 10-11:50AM online 2 credits	**Bldg Tech** ARCH 135B Anderson 12-1:50PM online 2 credits		
2PM	**Structures II** ARCH 132B Helbig Meier 2-4:50PM online 2 credits	**Design III** ARCH 131B Javidi Ames Anderson Makeka Raiji Veledar 2-5:50PM online 5 credits	**Design III** ARCH 131B Javidi Ames Anderson Makeka Raiji Veledar 2-5:50PM online	**Design III** ARCH 131B Javidi Ames Anderson Makeka Raiji Veledar 2-5:50PM online	**EVT** ARCH 134B Raiji 2-4:50PM online 3 credits

THE IRWIN S. CHANIN SCHOOL OF ARCHITECTURE OF THE COOPER UNION
Fourth Year Schedule
Spring 2021

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9AM	**Structures III** ARCH 142B Draper 10AM-12:50PM online 2 credits				
2PM	**Constr Mgt** ARCH 143B Maass 6-6:50PM online 1 credit	**Design IV** ARCH 141B Gersten Lokko Zinguer 2-5:50PM online 5 credits	**Design IV** ARCH 141B Gersten Lokko Zinguer 2-5:50PM online	**Design IV** ARCH 141B Gersten Lokko Zinguer 2-5:50PM online	

THE IRWIN S. CHANIN SCHOOL OF ARCHITECTURE OF THE COOPER UNION
Fifth Year Schedule
Spring 2020

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9AM		**Advanced Topics** ARCH 225.51 Vidler 10-11:50AM online 2 credits	**Advanced Topics** ARCH 225.52 Bates 9-10:50AM online 2 credits	**Advanced Topics** ARCH 225.49 Akawi 10-11:50AM online 2 credits	**Advanced Topics** ARCH 225.41 Morrow Wu 9-10:50AM online 2 credits
			Advanced Topics ARCH 225.45 Zinguer 11AM-12:50PM online 2 credits	**Advanced Topics** ARCH 225.50 Kallipoliti 12--1:50PM online 2 credits	**Advanced Concepts** ARCH 205.11 Gersten 11AM-12:50PM online 2 credits
2PM	**Advanced Topics** ARCH 225.53 Lotfi-Jam 1-2:50PM online 2 credits	**Thesis** ARCH 151B Akawi Eber Rustow M.Young 2-5:50PM online 6 credits	**Thesis** ARCH 151B Akawi Eber Rustow M.Young 2-5:50PM online	**Thesis** ARCH 151B Akawi Eber Rustow M.Young 2-5:50PM online	**Advanced Topics** ARCH 225.25 Bokov 11AM-12:50PM online 2 credits
	Prof Practice ARCH 154B Samuelian 5-7:20PM online 2 credits				???FARZIN???

THE IRWIN S. CHANIN SCHOOL OF ARCHITECTURE OF THE COOPER UNION
Architecture Electives
Spring 2021

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9AM		**NYC: 5000 Yr Hist** CU 102 Gersten 9-9:50AM online 1 credit	**Advanced Topics** ARCH 225.52 Bates 9-10:50AM online 2 credits	**Advanced Topics** ARCH 225.49 Akawi 10-11:50AM online 2 credits	**Advanced Topics** ARCH 225.41 Morrow Wu 9-10:50AM online 2 credits
		Advanced Topics ARCH 225.51 Vidler 10-11:50AM online 2 credits	**Advanced Topics** ARCH 225.45 Zinguer 11AM-12:50PM online 2 credits	**Advanced Topics** ARCH 225.50 Kallipoliti 12--1:50PM online 2 credits	**Hist Arch II** ARCH 125A Kogod 10AM-1:50PM online 3 credits
					Advanced Concepts ARCH 205.11 Gersten 11AM-12:50PM online 2 credits
2PM	**Advanced Topics** ARCH 225.53 Lotfi-Jam 1-2:50PM online 2 credits		**Hist Arch I** ARCH 115B Zuliani 2-4:50PM online 3 credits		**Advanced Topics** ARCH 225.25 Bokov 11AM-12:50PM online 2 credits
	IntroSustainability EID 247 Davis, Simson 6-8:50PM Rm 502CS/online**** 3 creduts		**Crossings** ARCH 185.17 Aranda, Keene 6-8:50PM online 2 credits		***Room located in 41 Cooper Square

THE IRWIN S. CHANIN SCHOOL OF ARCHITECTURE OF THE COOPER UNION
SPRING 2021 ELECTIVES

ARCH 115B HISTORY OF ARCHITECTURE I Guido Zuliani Wednesday 2-4:50PM
ARCH 125B HISTORY OF ARCHITECTURE II Lauren Kogod Friday 10AM-1:50PM
ARCH 185.17 CROSSINGS Benjamin Aranda, Samuel Keene Wednesday 6-8:50PM
ARCH 199 ARCHITECTURE INDEPENDENT STUDY *NEW* TBD TBD
ARCH 205.11 ADVANCED CONCEPTS David Gersten Friday 11AM-12:50PM
ARCH 225.25 ADVANCED TOPICS Anna Bokov Friday 11AM-12:50PM
ARCH 225.41 ADVANCED TOPICS Gina Morrow, Xiaoxiao Wu Friday 9-10:50AM
ARCH 225.45 ADVANCED TOPICS Tamar Zinguer Wednesday 11AM-12:50PM
ARCH 225.49 ADVANCED TOPICS Nora Akawi Thursday 10-11:50AM
ARCH 225.50 ADVANCED TOPICS Lydia Kallipoliti Thursday 12-1:50PM
ARCH 225.51 ADVANCED TOPICS Anthony Vidler Tuesday 10-11:50AM
ARCH 225.52 ADVANCED TOPICS Gary Bates Wednesday 9-10:50AM
ARCH 225.53 ADVANCED TOPICS Farzin Lotfi-Jam 1-2:50PM
FYI, ARCHITECTURE ENROLLMENT WELCOME
CU 102 NEW YORK: A 5000 YEAR HISTORY, PART II David Gersten Tuesday 9-9:50AM
EID 247 INTRODUCTION TO SUSTAINABILITY AND ALTERNATIVE ENERGY TECHNOLOGIES Ben Davis, Amanda Simson Monday 5-5:50PM, Friday 11AM-12:50PM
ME 453 ENERGY EFFICIENT BUILDING SYSTEMS Melody Baglione Tuesday 4-6:50PM (subject to change to include Architecture students)
VIP 382A, VIP 382B, VIP 382C VERTICALLY INTEGRATED PROJECTS Dirk Luchtenberg   Melody Baglione/David Wooton   Sven Haverkamp Thursday 10-10:50   Thursday 10-10:50   Friday 3-3:50PM

ARCH 115B HISTORY OF ARCHITECTURE I
Guido Zuliani
Wednesday 2-4:50PM
online
3 credits
HISTORY OF ARCHITECTURE - (XII SEC. – XVII SEC.)
The completion of the choir of the Basilica of Saint Denis in 1144 in France, marked the beginning of the characterization and diffusion in France first, in Germany, England and in the rest of Europe later, of what has been conventionally defined as Gothic architecture. The evolution and transformations of construction methods and techniques, such as the adoption of the pointed arch in a ribbed volts system with the consequent concentration of structural supports and the reduction of wall structures, the responses to new theological and liturgical contents and to the increase of urban population, all converged to form a new coherent and original architectural system, a new coherent style, that had at its center the construction of the great Cathedrals. In their realization all the arts converged under the domination of architecture and the Cathedral, with its deep roots in the social and political transformations taking place in Europe at the time, became the highest, and almost the exclusive, symbolic embodiment of the complex cultural world that characterized the High Middle Ages. By the end of the 14th century, as consequence of the crises caused by wars and epidemics that traversed Europe, the parabola of Gothic architecture can be consider concluded, and rise of new cultural position critical of the Medieval Scholasticism and the progressive independence gained by the different visual arts led toward new developments for architecture to emerge in the following century. From the end of the 14th century to the beginning of the 16th what came to be known as the "Humanist Revolution" radically reformulated the concepts of Nature, of the Subject and of History and reframed their reciprocal relations. The *Philosophia Naturalis* led the way to the 17th century birth of modern science; the Renaissance man, freely in charge of his destiny, became the ancestor of the modern subject and the knowledge of an idealized antiquity proposed History as guide for human actions. Within this new context the very idea of the project and the discipline of architecture were constructed around the definition of instrumentations, procedures and cultural and social values that were integral components of those transformations and that still constitute the locus of architecture's own theoretical speculations and conceptual advancements. In a series of three-hour classes the course will illustrate and analyze the history of archi-tecture from the beginning of the 12th century to the end of the 17th century through a close reading of the relations between the definition of design concepts, methods, tools and realized architectures. At different moments of the semester visiting lecturers will introduce us to the contemporary developments of architecture in non-European regions.
REQUIREMENTS: All students are required to submit 2 (two) weekly written responses concerning the weekly reading assignments. All students are required to submit 4 (four) drawings of chosen buildings at regular intervals to be decided according to the development of the subjects of the classes. Attendance is mandatory.
Required of all Architecture students. Open to Art and Engineering students as an elective.

ARCH 125B HISTORY OF ARCHITECTURE II
Lauren Kogod
Friday 10AM-1:50PM
online
3 credits
A continuation of ARCH 125 A: an introduction to the study of the concepts, designs and built examples of architecture throughout the world, 1950-2000. Case studies and comparisons of specific architectural projects will offer focus to a variety of themes as the ostensible unity of the Modern Movement, aka, the "International Style," was increasingly eroded by the multiplicity of voices within its ranks and, more significantly, by growing interest in regionalism and vernaculars, Pop art and mass culture, post-colonial identities, typology and the historic city, semiotic and structuralist theories, new technologies and materials, ecological concerns, varying formalisms, the rise of (post-structuralist) theory and the "critical" project, and the first generation of digital and "paperless" design and fabrication. These architectures will be analyzed in terms of planning and design, structure, function, social context and architects' intentions, but ultimately as works whose meaning is less than stable or fixed. The class will meet once a week for a lecture and discussion then break into two, 60-minute, seminars of approximately 15 students each. Students will present architectural projects to the class and complete different kinds of writing projects, including description, analysis and research.
Prerequisite: ARCH 115 History of Architecture I. Required of all Architecture students. Open to Art and Engineering students as an elective.

ARCH 185.17 CROSSINGS
Benjamin Aranda, Sam Keene
Wednesday 6-8:50PM
online
2 credits
MACHINE LEARNING FOR ARCHITECTURE & ART
Machine Learning for Art & Architecture is a cross-disciplinary seminar in Architecture, Art and Engineering schools where machine learning is used towards creative experimentation. Machine Learning describes a growing field of programming for systems that learn on their own and have the ability to improve without explicit instruction. A particularly novel aspect of this field is the ability to learn from large sources of data allowing for distinctly new kinds of exploration in many fields. Because these large datasets, whether found or created, act as the raw material in the learning process, they are fundamental to the results and critical to any idea of creative authorship with these tools. The seminar challenges students to create their own datasets and experiment with Machine Learning techniques in a highly speculative manner. The first part of the class explores the current state of the art of machine learning. Through a month-long survey, students become familiar with the predominant algorithms used for data analysis and creative output. They develop a proficiency using Neural Networks and the various generative techniques they foster. The intent of the class is to place students in a collaborative environment of art, architecture and engineering students, experimenting together on a subject matter that requires creative abilities in the student's respective fields along with the technical proficiency of computer programming. This seminar is a continuation of similar classes

taught by Benjamin Aranda and Sam Keene, where critical questions around the problem of machine learning guide class discussion such as, what does it mean for an artist, architect, or engineer to be assisted by machine intelligence and how might these new tools impact the idea of authorship? The second part of the class involves the creation of group projects that are guided by their own specific challenges to the creative process with a machine learning technique.
Open to all students as elective.

ARCH 199 ARCHITECTURE INDEPENDENT STUDY
Faculty TBD
Schedule TBD
2 credits
Objective:
The purpose of this Independent Study is to allow students to pursue an independent study or research
project outside their regular coursework, in order to delve more deeply into a specific topic of interest.
An Independent study may be taken under the supervision of a member of the resident faculty (defined
as full-time or proportional-time faculty members) or adjunct faculty members who have taught at the
School of Architecture for at least 6 semesters. The faculty member -- who becomes the advisor for the
independent course -- must approve the proposed study and agree to provide continuing supervision of
the work.
Eligibility:
Only students in fourth and fifth years in good academic standing (defined as having earned a
minimum 3.25 G.P.A. overall for the previous semester) are eligible for independent study. Independent
study may be taken only once during a semester in an advanced subject for two (2) credits.
One (1) credit of independent study represents a minimum of three (3) hours of work during each week
of a 15-week semester.
Application procedure:
The major consideration in approving proposals for independent study is the educational value of the
study project within the structure of the degree requirements as well as the student having successfully
completed any relevant introductory coursework in the topic proposed. Before applying for an independent study, eligible students should contact the faculty they wish to consider as an advisor to discuss their proposal.
1. The selected faculty advisor must be teaching in the School of Architecture during the
semester in which you wish to enroll (a professor on leave may not supervise an independent
study).
2. The student writes a one-page proposal for the course including a concise description, deliverables, workplan, schedule and preliminary bibliography and describe previous coursework in the proposed topic as well as the educational value of the selected topic of interest.
3. The student selects a faculty adviser who must sign off on the proposal

4. The student submits the signed proposal to the Dean for review in consultation with the faculty member.
5. Approval of the Independent Study based on merits of proposal and availability of funds to compensate faculty member in compliance with CUFCT/CUOP contract.
6. Once approved, student will receive permission to register for ARCH 199.

ARCH 205.11 ADVANCED CONCEPTS
David Gersten
Friday 11-12:50PM
online
2 credits
HINGES, MIRRORS AND ECLIPSES
Today, in these early days of the 21st century, the most common observation is transformation itself: cultural, technological, social, political, ecological and economical, we are in the midst of re-alignments and re-articulations of every aspect of our lives. The world is facing significant crises, the biological risks of the current pandemic are likely a first wave, setting in motion multiple systemic transformations, with billions of people at risk, we face a multitude of critical questions and challenges. There are people, communities, and institutions across all disciplines and across the globe that are increasingly confronted by the need for new models of asking the extraordinarily complex questions of our time. The Seminar, Hinges, Mirrors and Eclipses is grounded in the idea that the spatial, poetic and material imaginations afford us unique means of registering and creating transformation, of engaging the world and making a contribution. Working from the principle that our capacity to act in the world is grounded in our capacity to recognize and comprehend transformation, the course covers a large arc of content, asking questions of our world, our disciplines and our humanity. With examples from the over 50,000 year histories of art, architecture, poetry, film, theater, science, technology, finance, politics, industry, biology, religion and literature, we will move through a close examination of the nature of transformation. Much of this discussion focuses on turning points or hinges in these histories, including: The invention of the elevator, train and telegraph, the invention of modern incorporations, modern banking and electricity, the Copernican turn, Darwin and the transformations of Yoruba polytheism, the birth of the Greek theatre and the emergence of photography and film, the birth of 'the Nuclear' and the rise of GRIN technologies: Genetics, Robotics, Information technology and Nanotechnology. From the Cave Drawings to block-chain and the dawn of Crypto-currencies, the conversations will explore many forms of knowledge, agency, action and transformation. The transformations of our time contain great promises and great challenges. In the broadest sense, education holds the capacity of developing new questions, new pathways of understanding and forms of knowledge that address the challenges of our increasingly complex world. Education offers the capacities to understand, to withstand and ultimately to create transformations that embody our best hopes and aspirations.
Required of all Architecture students. Open to Art and Engineering students with permission of the instructor. Maximum enrollment of 15 students.

ARCH 225.25 ADVANCED TOPICS IN HISTORY, THEORY, CRITICISM
Anna Bokov
Friday 11AM-12:50PM
online
2 credits
AVANT-GARDE AS METHOD: VKHUTEMAS AND THE PEDAGOGY OF MODERNISM
This course is conceived as an investigation into the origins of modernism through the lens of a radical avant-garde school – Higher Art and Technical Studios, known as Vkhutemas, which was a counterpart of the Bauhaus. Established in 1920, Vkhutemas created an entirely new type of interdisciplinary design education, by combining elements of beaux-arts and polytechnic models with the pioneering achievements in art and science. Like the Bauhaus, the groundbreaking Soviet institution articulated the ideals of the modern paradigm into a systematic body of knowledge, which could be taught as a design curriculum. Both schools served as incubators for the main protagonists of modern movement, from Wassily Kandinsky and El Lissitzky to Moisey Ginzburg and Hannes Meyer, allowing them to channel their intellectual explorations into innovative pedagogical platforms. While the course examines Vkhutemas in particular, it also asks larger questions about the nature of design pedagogy and the corresponding technologies of knowledge. Vkhutemas not only challenged the canons of professional education but transformed the very role of an architect, making it far more collaborative, experimental, and socially engaged. Using projects produced by the school and its affiliated organizations as case studies, the course encourages students to draw their own conclusions about new modes of design education, based on methodology rather than mastery, and to imagine new trajectories for architecture and its teaching, moving forward. The course is structured around the experiments of Vkhutemas – ranging from foundational exercises to advanced student projects, as well as key texts and design works of the protagonists themselves. Examining these will provide a more profound understanding of the means, methods, and theoretical underpinnings of the modern movement. The final project of the course will include critical writing and production of two and three-dimensional analytical works and will be conducted in conjunction with the upcoming centennial exhibition at the Cooper Union in the fall of 2021.
Required of all Architecture students. Pre-requisites: ARCH 115 History of Architecture I, ARCH 125 History of Architecture II. Open to Art and Engineering students with permission of the instructor. Maximum enrollment of 15 students.

ARCH 225.41 ADVANCED TOPICS IN HISTORY, THEORY, CRITICISM
Gina Morrow, Xiaoxiao Wu
Friday 9-10:50AM
online
2 credits
Structural drawings have a distinct set of graphic conventions that clearly show the way loads travel through a building from the roof to the ground and how different structural materials (wood, concrete, and steel) resist these loads through their connections and framing strategies. The legibility of this graphic, technical language can readily reveal the clarity (or lack thereof) in the inherent geometry and material systems of buildings. In this class we seek to explore the meanings and connotations that plan, elevation, and section take on in the discipline of structural engineering. We will study engineering concepts through the reading and production of structural drawings, proceeding thematically by relating primary structural systems to their accompanying drawing forms. These systems will be examined through a sequence of drawing and analysis exercises with which students will work in groups to develop a structural design and set of drawings. In the second half of the semester a series of advanced, discrete topics will be introduced including structural detailing, the differentiation of material systems, and complex geometry. Concurrent with the lectures on advanced topics, students will research the original drawings for a structure of their choosing and develop an interpretive drawing that describes a particular behavior or feature of the structural system discovered in the source drawings. Through this collective research we hope to probe the conventions and the history of structural drawings to better understand this form of technical language which is often relegated to the background of architectural discussions but plays a critical role in the design of buildings.
Gina Morrow, Associate, is a designer and project manager at Guy Nordenson and Associates; she joined the firm in September of 2015. She holds a BA from Vassar College (2011) and an MArch from Princeton University School of Architecture (2015). Before graduate school she worked as an editorial and digital production assistant at Princeton Architectural Press. During her studies at Princeton University she interned with Guy Nordenson and Associates and MOS Architects and also served as an editor of Pidgin magazine. She is currently working on the Museum of Contemporary Art San Diego Expansion in La Jolla CA, the Rothko Chapel Master Plan and Renovation in Houston TX and the Whitney Museum of American Art Sculpture Installation in New York NY.
Xiaoxiao Wu, Associate, is a structural engineer at Guy Nordenson and Associates; she joined the firm in June of 2015. She holds a Bachelor of Engineering in Civil Engineering from Tongji University in Shanghai, China (2014) and a Master of Engineering in Civil Engineering from the Massachusetts Institute of Technology (2015). During her studies she interned at the Engineering Research Institute of Shanghai Construction Group where she analyzed high-rise building performance, as well as the Shanghai Mechanized Construction Group where she assisted the construction site manager. She is currently working on the Rothko Chapel Master Plan and Renovation in Houston TX and The Frick Collection Facility Expansion and Renovation in New York NY.
Required of all Architecture students. Pre-requisites: ARCH 115 History of Architecture I, ARCH 125 History of Architecture II. Open to Art and Engineering students with permission of the instructor. Maximum enrollment of 15 students.

ARCH 225.45 ADVANCED TOPICS IN HISTORY, THEORY, CRITICISM
Tamar Zinguer
Wednesday 11AM-12:50PM
online
2 credits
THE MASK OF ARCHITECTURE
The plague doctor in the 17th century wore a mask with a long beak sure to keep anyone at bay, and large enough to hold scented herbs that were to protect against the miasma, or smell, thought to carry the disease. Worn on top of a long coat, the ominous figure of this 'healer' was more likely to ward off bad spirits than to provide a soothing cure. Centuries later, the mask emblematizes our current moment. The entire world, in sync, has donned a new attire in a very short time. During a divisive period, when differences of opinion clearly pull people apart, this small piece of fabric has been embraced out of necessity regardless of beliefs and backgrounds. Subjects and objects usually amalgamate in the mask, calling into question what is being masked, and what is being signified. In architecture, the mask has a long cultural history and has become significant numbers of times. Since the Middle Ages, in town squares, men have masked themselves as animal characters and danced, taking over the streets in noisy rituals that drew crowds. A meeting point between outside and inside, the mask has traditionally been associated with the façade. The facades of Adolf Loos for example, 'masks of modernity', were white, impenetrable and shielding a much more private interior. Some anthropomorphic facades designed during the 1970's by Takefumi Aida (b. 1938), a Japanese postmodern architect, appeared to smile, hence questioning the performative expression of a house and the fictions that it shrouds. John Hejduk's Masques (1970s-80s) were not merely buildings but cultural acts, creating dialogues between city and characters. In this seminar, we will look at these examples and many more, finding case studies, and creating together a compendium of architectural masks. We will hear and read from sociologists, psychologists, artists and art historians about the mask. Working individually and in a group, we will write short essays, compile critical texts and gather illustrations to create by the end of the semester an anthology, ready-for-publication, which will connect today's predicament with other instances of terror and fear, cover and disguise, screens and veils; masked instances of architecture, audience and camouflage.
Prerequisites: ARCH 115 A-B, ARCH 125 A-B and ARCH 175 or permission of the instructor. Required for Architecture students. Open to Art and Engineering students as elective. Maximum enrollment of 15 students.

ARCH 225.49 ADVANCED TOPICS IN HISTORY, THEORY, CRITICISM
Nora Akawi
Thursday 10-11:50AM
online
2 credits
ARCHIVES AND ASHES: ARCHITECTURE AND THE POLITICS OF MEMORY AND FORGETTING
There is a stunning contrast between the simultaneous totality of both destruction and inscription enveloping the world today. On the one hand, vast regions of the world, and the lives of those inhabiting them, are considered discardable. They are left to drown or burn by climate violence and the war industry, sending into oblivion the knowledge, the claims, and the evidence that pertain to them, their ancestors, and their future generations. On the other hand, practically everything around and about us is being recorded, engraved, stored, disseminated, valued, and sold. What do we make of this seemingly irreconcilable contradiction? The meaning of 'archive' originates from the Greek *arkheion*: the address or residence of the superior magistrates, the archons, those who commanded. Archiviolitic power is the power to destroy the archive (Derrida, 1996). Indeed, the power to record and to erase are one and the same. Architecture acts sometimes as accomplice, and others as stage in the practices of collective memorialization or designed forgetting. Archives, both digital and physical, are also the sites of resistance against erasure and oblivion. Through a close look at theoretical frameworks, historical references, and contemporary archival practices, this seminar will address the intersection of architecture and the politics of the archive. Understanding that archives are constituted of selected fragments, frictions, and fictions, we will consider the potentials of archives to act as a site of contestation and argumentation, holding multiple narratives and enabling negotiation and dissent. We will pay particular attention to emancipatory archival practices, particularly in communities whose record and memory have been systematically targeted: from South Africa to Armenia, and from Gaza to the Bronx. From a close and critical study of a precedent, students develop an argumentative archival methodology to be tested in their past, present, or future design work.
Required of all Architecture students. Pre-requisites: ARCH 115 History of Architecture I, ARCH 125 History of Architecture II. Open to Art and Engineering students with permission of the instructor. Maximum enrollment of 15 students.

ARCH 225.50 ADVANCED TOPICS IN HISTORY, THEORY, CRITICISM
Lydia Kallipoliti
Thursday 12-1:50PM
online
2 credits
EDIBLE, OR, THE ARCHITECTURE OF METABOLISM
During the COVID-19 pandemic, the question of 'where our food comes from' became eminently important. The fragility of our production processes and the mobility networks that transport commodities and food, have urged new forms of localization and design of circular economies. "Food" in this course will be approached both literally and metaphorically. On the one hand, food explores architectural strategies of local production and self-sufficiency (e.g. urban agriculture, renewable energy); on the other, it integrates in the built environment operations that use by-products of urban life (e.g. livestock, agriculture, forest residues) as resources. The objective is to replace traditional linear systems of "make, use and dispose" with circular systems that limit material and resource loss or explore alternative pathways. With buildings being responsible for approximately 40% of energy consumption, 36% of CO_2 emissions, and the building industry being one of the heaviest waste generators globally, it is indispensable for architecture to respond, pushing for alternative design and construction models, moving away from the current prevailing models-both intensely resources-consuming and contaminating. Rather, therefore, than a consuming built environment, this course will investigate strategies to produce a built environment able to generate resources – food, energy or materials.
Required of all Architecture students. Pre-requisites: ARCH 115 History of Architecture I, ARCH 125 History of Architecture II. Open to Art and Engineering students with permission of the instructor. Maximum enrollment of 15 students.

ARCH 225.51 ADVANCED TOPICS IN HISTORY, THEORY, CRITICISM
Anthony Vidler
Tuesday 10-11:50AM
online
2 credits
ARCHITECTURE *AND* THE CITY: FROM URBANISM TO URBAN DESIGN, 1945-2020
Reconstruction after World War II stimulated the production of a wide variety of approaches to the relationship of architecture to the city. Responding both to the war damage and to the historically blind destruction caused by "urban renewal" projects, and at the same time critical of the pre-War paradigms of CIAM and Modern Movement "urbanism," architects and urban theorists proposed new formulations that took into account social, visual, and historical conditions while attempting to adapt cities to the increasing remands of circulation, servicing, and public access. Selected cases will be analyzed in detail; participants will select their own for research projects. Case studies will include proposals by Kevin Lynch (*The Image of the City*, 1960); Melvin Webber and Richard L. Meier ("The Non-Place Urban Realm," 1966); Aldo Rossi (*The Architecture of the City*, 1966); Cedric Price (Potteries Thinkbelt, 1966);Alison Smithson (*Team X Primer*, 1968); Denise Scott-Brown and Robert Venturi (*Learning from Las Vegas*, 1972); O.M. Ungers (*The Green Archipelago*, 1977); Colin Rowe and Fred Koetter (*Collage City*, 1978); Rem Koolhaas (*Delirious New York*, 1966), Plater-Zyberk, et al (The New Urbanism, 1993)and will be studied in relation to competitions for the rebuilding of cities including London (MARS plan 1943), Berlin (Haupstadt Berlin, 1950), Tokyo (Kenzo Tange Master Plan,1960), Rome (Roma Interotta, 1978), Venice (Cannaregio, 1978), etc.
Required of all Architecture students. Pre-requisites: ARCH 115 History of Architecture I, ARCH 125 History of Architecture II. Open to Art and Engineering students with permission of the instructor. Maximum enrollment of 15 students.

ARCH 225.52 ADVANCED TOPICS IN HISTORY, THEORY, CRITICISM
Gary Bates
Wednesday 9-10:50AM
online
2 credits
SVALBARD – TACTICS FOR A POST-SOVEREIGN POLAR RESEARCH OUTPOST
Svalbard is a revealing sensor within the complex matrix of global political, informational, and economic systems. With less than 2,700 inhabitants, this unincorporated area foreshadows an emerging post sovereign state. Feigned interest in natural resources has enabled (46) nation states to innocuously manifest a strategic presence on the archipelago while advancing non-linear interests. Coal, technology, research, and environmental tourism all overlap in various forms and with a multitude of benefactors, many of whom blur or overextend the boundaries of neutrality encoded in the original Svalbard Treaty. The accumulation of interests, contradictions, and conflicts, amid a massive consolidation of technology are the foundations of this new structure, or rather new state. Svalbard's strategic position as a logistical juncture within future global shipping routes, optic cable paths, and geopolitical systems is quietly creating an enormous amount of speculation. The melting ice opens new definitions of boundaries for oil drilling rights and fishing zones. Strategic positioning by Russian and China keeps coalmining running while triggering a new market for land acquisition. NASA-funded satellite parks spearhead scientific research on the environmental effects of climate change. Meanwhile, new exotic forms of tourism are emerging: Arctic, polar sports, ghost towns, and science tourism. Through Svalbard the studio will investigate climate research where climate change is most visible, tourism where the environment is most fragile, food production in polar conditions, clean energy to replace nonrenewable resources, alternative forms of housing, polar technology and space research where conditions are most suitable. As these landscapes quietly transform, the future of Svalbard will impact all of us.
Gary Bates (US) Architect, Partner
Gary Bates founded SPACEGROUP with Gro Bonesmo in 1999. The office quickly made its mark by winning major international competitions such as the Prostneset Ferry Terminal in Tromsø, the Vestbane National Library, the Filipstad Masterplan, and the Oslo Central Station. Gary began a collaboration with Rem Koolhaas (OMA) in 1992 on such projects as the Educatorium (NL), Jussieu Library in Paris, Cardiff Bay Opera House, Samsung Headquarters in Seoul, and the Media Valley masterplan in Inchon Korea. Gary was principal in charge of the Asia department. He has been visiting teacher, lecturer, and critic at the University of Texas, the University of Kentucky, AHO, Syracuse University and the Berlage Institute in the Netherlands, amongst others. Gary is currently involved in SPACEGROUP projects worldwide, from Cote D'Ivoire, Novosibirsk Russia, Louisville USA, New York, and Azerbaijan. He studied architecture at Virginia Polytechnic University & State University.
Required of all Architecture students. Pre-requisites: ARCH 115 History of Architecture I, ARCH 125 History of Architecture II. Open to Art and Engineering students with permission of the instructor. Maximum enrollment of 15 students.

ARCH 225.53 ADVANCED TOPICS IN HISTORY, THEORY, CRITICISM

Farzin Lotfi-Jam
Monday 1-2:50PM
online
2 credits
SIMULATION: THEORIES, ENVIRONMENTS, AND EVENTS
In September 2020 the German government announced EUR 32 million in funds for the cities of Hamburg, Leipzig, and Munich to develop the Connected Urban Twins project. This comes after Wellington City Council in New Zealand proposed developing a National Digital Twin as an economic recovery response to the COVID-19 pandemic, and four years after the Singapore government in collaboration with Dassault Systèmes launched Virtual Singapore, a "dynamic three-dimensional city model and collaborative data platform" of Singapore. A Digital Twin, the latest product being marketed to cities by global logistics companies, is a virtual replica that maps data from objects in the physical city to digital proxies in a simulated city in order to produce a real-time representation of the patterns of urban life. At stake in this urban technology is the reliance on a computational model to make the city legible to decision makers, and to use this model to compute, control, and imagine urban futures. How, this seminar asks, are simulations and models like digital twins reading and representing cities. What does this mean for urban life? This critical technology course will simulate how the city is being simulated. A hybrid seminar-workshop, the class will combine readings and discussions with design workshops. Students will trace the emergence of a field of knowledge—spanning military, commercial and entertainment domains—concerned with making human decisions quantifiable and computable. We will look at how models of behavior from the cognitive sciences have been translated into object-oriented programming models. We will examine postwar military techniques that have made vast, distributed, and interactive combat simulations possible. We will see how these theories and techniques have converged in the last decade on the city in order to anticipate the behavior of human subjects. We will use the Unreal Gaming Engine— a software package for developing immersive simulations—to analyze and animate historical theories, contemporary algorithms, and global marketing campaigns that simulate the city.
* No prior technical knowledge necessary.
Required of all Architecture students. Pre-requisites: ARCH 115 History of Architecture I, ARCH 125 History of Architecture II. Open to Art and Engineering students with permission of the instructor. Maximum enrollment of 15 students.

CU 102 NEW YORK CITY: A 5000 YEAR HISTORY, PART II

David Gersten
Tuesday 9-9:50AM
(meets virtually once a week with a final 3-hour, in-person class)
online
1 credit
Today, the world is facing significant crises. With billions of people at risk, we face a multitude of critical questions. The biological risks of the current pandemic are likely a first wave, setting in motion multiple systemic challenges and transformations: economic, social, political, cultural, technological, and ecological. We are in the midst of realignments and rearticulations of every aspect of our lives. There are people, communities, and institutions across all disciplines and across the globe that are increasingly confronted by the need for new models of asking the extraordinarily complex questions of our time. "New York City, a 5000 Year History" begins with the idea that New York City can be understood as a microcosm of world cultures, a living ecosystem of cultural diversity in a state of continuous transformation. With as many as 800 spoken languages, New York City is arguably the most linguistically diverse city on earth, containing a multitude of human, spatial, temporal, material, systemic, and structural elements interacting in multiple time frames. This creates a living laboratory to explore and develop new questions that address the challenges of our increasingly complex world. With examples from over 5,000 years of art, architecture, engineering, science, technology, biology, finance, industry, politics, poetry, film, music, theater, religion, and literature, the course is a close examination of New York City and the nature of transformation. With guest speakers from a wide range of backgrounds and experiences, much of the discussions will focus on turning points or hinges in these histories. These will include: the invention of the elevator, train, telegraph, and water infrastructures; the invention of modern incorporations and modern banking; the Atlantic Slave Trade, Jim Crow, redlining, and mass incarceration; the carbon economy and the climate crises; the transformations of Yoruba polytheism in music, literature, and the visual arts; the birth of the Greek theatre and the emergence of photography and film; the advent of 'the Nuclear' and the rise of GRIN technologies (Genetics, Robotics, Information technology and Nanotechnology). From the Cave Drawings to the dawn of Blockchain, the conversations will explore many forms of knowledge, agency, action, and transformation that create and move though New York City. Over its 160-year life, The Cooper Union has given voice to urgent questions, making critical contributions to countless transformations and social movements. Today, the need for social movements, for civic engagement, and exploratory works of empathy and ethics are as urgent as they have ever been. The very tangible potential to transform the lives of the most vulnerable creates an urgent call for spaces of communication and reciprocity where people can develop new understandings, perceptions and practices that respond to the scope of our challenges. "New York City, a 5000 Year History" covers a large arc of content, asks questions of our city, our disciplines, our humanity, and searches for new modes of creating the transformations that embody our best hopes and aspirations. New York City: A 5000 Year History (CU102) is offered in the Spring semester of 2021. It is a continuation of the fall semester with the course structured in such a way that it allows students to either continue from the fall or join in for the spring semester without having participated in the Fall. CU102 will include a semester-long research project focused on the linkages between New York City and the United Nations Sustainable Development Goals (SDGs).
Open to all students as elective.

EID 247 INTRODUCTION TO SUSTAINABILITY AND ALTERNATIVE ENERGY TECHNOLOGIES
Ben Davis, Amanda Simson
Monday 5-5:50PM, Friday 11AM-12:50PM
online
3 credits
Sustainability and sustainable development and how they relate to culture, politics, and design of our built environment. Review of the technological history of fossil fuel use and how it has affected Earth's climate. Global warming potential, radiative forcing, carbon cycle, and carbon budget. Life Cycle Assessment (LCA) and its application to sustainability / minimizing environmental impact. Alternatives to fossil fuel energy (including nuclear, geothermal, solar, hydropower, and bioenergy sources) and potential consequences of these technologies.
LEARNING OBJECTIVES
Explain what sustainability is and how it is affected by time, geography, and people
Explain what a life cycle assessment is and what needs to be considered to create one
Use LCA as a tool to compare two alternative processes or products
Calculate air pollution and greenhouse gas emissions associated with switching between common fuels for electricity production
Explain the technological, social, and economic impacts of switching to different alternative energy technologies from more common fossil fuel based processes
Apply basic material and energy balances to explain how various alternative energy systems produce electricity
HOMEWORK, PROJECTS AND EXAMS: There will be four (4) homework assignments, one written paper, and one group poster presentation for this class. Homework will be problems and short answer questions which reinforce concepts from class and the textbook(s). The project will be to perform a life-cycle assessment on two similar products or process alternatives. It will be a group project and students will be required to create a poster.
Prerequisites: The course has no prerequisites; all material needed to understand the various topics will be covered in class. The class is aimed towards elective-eligible students of all majors (Architecture, Art, and Engineering).

VIP 382A VERTICALLY INTEGRATED PROJECTS
Dirk Luchtenberg
Thursday 10-10:50AM
Room 504CS/online
1 credit
VIP 382B VERTICALLY INTEGRATED PROJECTS
Melody Baglione, David Wooton
Thursday 10-10:50AM
Room 201CS/online
1 credit
VIP 382C VERTICALLY INTEGRATED PROJECTS
Sven Haverkamp
Friday 3-3:50PM
Room 201CS/online
1 credit
Vertically Integrated Projects (VIP) Program introduces a new course structure that promotes faculty-led interdisciplinary initiatives from which students can work on large scale projects over the course of several semesters. VIPs provide students with faculty mentorship and the opportunity for professional research. Moreover, students from all years are able to and encouraged to apply, allowing for peer to peer mentorship.

*************************BAGLIONE COURSE DESCRIPTION******************