Architecture

Accredited by: The National Architectural Accrediting Board.

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture.

The New Jersey School of Architecture offers a five-year Bachelor of Architecture (B.Arch.) as a first professional degree program that is accredited by The National Architectural Accrediting Board The school also offers a nonprofessional, four-year undergraduate program leading to the Bachelor of Science in Architecture (B.S.Arch.). The B.S.Arch. does not lead to licensure as an architect; instead it presents students with a wide array of complementary options leading to career opportunities within the larger design and building industries.

The New Jersey School of Architecture educates students to assume positions of responsibility and leadership in the architectural profession and in developing areas of opportunity in technology and community design related to the discipline of architecture. An emphasis on studio design in the curriculum is reinforced by required courses in history, building science, professional practice and social concerns. A diverse faculty brings its expertise to bear on issues of architecture, technology and culture and challenges students to prepare for their productive years as practitioners, scholars and researchers. The architecture program builds on the strengths of a top-tier Research University with its long history in computer graphics while emphasizing design directed toward the traditional human-centered values of architecture.

NJIT Faculty

A
Alcala, Jose M., University Lecturer

B
Bess, Mark E., University Lecturer
Brothers, David A., Senior University Lecturer

C
Cays, John M., Associate Dean for Academics, College of Architecture and Design;
Interim Director, School of Art and Design

D
Decker, Martina, Associate Professor
Evans, Deane, Associate Dean for Research; Director, Center for Resilient Design

E
Esperdy, Gabrielle, Professor, Interim Dean

G
Garcia Figueroa, Julio C., University Lecturer
Goldman, Glenn, Professor, School of Design

H
Harp, Cleveland J., University Lecturer
Hurtado De Mendoza, Maria, Associate Professor

K
Kelly Hutzell, Associate Professor, Director, School of Architecture
Kim, Hyojin, Associate Professor
Kolarevic, Branko R., Professor,
Kum-Biocca, Hyejin Hannah

N
Narahara, Taro, Associate Professor
Navin, Thomas R., Senior University Lecturer

O
Ogorzalek, Thomas, Senior University Lecturer

P
Parlac, Vera, Associate Professor

R

Riether, Gernot, Associate Professor

S
Schwartz, Mathew L., Assistant Professor
Sollohub, Darius T., Associate Professor

T
Taher, Rima, Senior University Lecturer
Theodore, Georgeen, Professor

W
Won He Ko, Assistant Professor

Z
Zarzycki, Andrzej, Associate Professor
Zdepski, Michael, S., Associate Professor

Programs

- Architecture - B.Arch. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/barch/)
- Architecture - B.S. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/bs/)

B.S./M.S. Program Options **(**http://catalog.njit.edu/undergraduate/academic-policies-procedures/special-degree-options/**)**

- Architecture - B.Arch. and Management - M.S. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/barch-ms-management/)
- Architecture - B.Arch.and Management of Technology - M.B.A. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/barch-mba-technology/)
- Architecture - B.Arch. and Infrastructure Planning - M.I.P. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/barch-master-infrastructure-planning/)
- Architecture - B.Arch. and Civil Engineering - M.S. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/barch-ms-civil-engineering/)
- Architecture - B.S. and Management - M.S. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/bs-ms-management/)
- Architecture - B.S. and and Management of Technology - M.B.A. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/bs-mba-technology/)
- Architecture - B.S. and Infrastructure Planning - M.I.P. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/bs-master-infrastructure-planning/)
- Architecture - B.S. and Civil Engineering - M.S. (http://catalog.njit.edu/undergraduate/architecture-design/architecture/bs-ms-civil-engineering/)

New Jersey School of Architecture Courses

ARCH 1. Architecture Elective. 3 credits, 3 contact hours (3;0;0).**

ARCH 110. Tools and Techniques I: Introduction to Architecture Thinking. 3 credits, 3 contact hours (3;0;0).
This course is the first of a required two-semester sequence; it introduces students to diverse tools and techniques of architecture thinking in diverse spheres of architecture culture through weekly lectures and recitations. Here, thinking is a critical disciplinary practice that parallels architecture as a practice of making, and this course is dedicated to fostering a broad understanding of what it means to “do” architecture. This fall semester course in tools and techniques of architecture thinking is followed by a spring semester of tools and techniques of architecture making.

ARCH 156. Tools and Techniques II: Introduction to Architecture Making. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 161 or ARCH 195. Introduction to digital tools in the delinieation, fabrication, and representation of contemporary design.

ARCH 195. Architecture Studio I. 4 credits, 9 contact hours (0;0;9).
This course is an introduction to the fundamental principles and elements of design. Emphasis on design methods, manipulation of form and space, and representation skills using traditional and digital instruments.

ARCH 196. Architecture Studio II. 4 credits, 9 contact hours (0;0;9).
Prerequisites: ARCH 195 or ARCH 161. A continuation of ARCH 195.

ARCH 2. Architecture Elective. 3 credits, 3 contact hours (3;0;0).**

ARCH 210. History of Architecture I. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 110 and ENGL 101. This course examines the history of architecture and urbanism from the Paleolithic period to the Industrialization and provides a conceptual framework for looking at and analyzing structures and spaces. The geographic scope is global with emphasis on buildings, projects, landscapes, urban environments, and designers examined in relation to the social, economic, and political climates that produced them.

ARCH 211. History of Architecture II. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 210 or ARCH 251 and ARCH 252. This course examines the history of architecture and urbanism from the eighteenth century to the early twenty-first century and builds upon the conceptual framework introduced in History I. The geographic scope continues to be global with emphasis on buildings, projects, landscapes, urban environments, and designers examined in relation to the social, economic, and political climates that produced them.

ARCH 223. Construction I. 3 credits, 3 contact hours (3;0;0).
This course is an introduction to construction processes, focusing on wood, steel, masonry, concrete materials and their related assemblies.

ARCH 224. Construction II. 3 credits, 3 contact hours (3;0;0).
Prerequisite: ARCH 223. This course surveys enclosure joints and assemblies, including roofing, insulation, doors, windows, glass and hybrid systems. It also focuses on interior and exterior finishes and their construction methodology and documentation, including Building Information Modeling (BIM).

ARCH 283. Special Topics. 3 credits, 3 contact hours (3;0;0).
Investigation of problem of special interest in architecture.

ARCH 295. Architecture Studio III. 4 credits, 9 contact hours (0;0;9).
Prerequisites: (ARCH 196 and ARCH 110 and ARCH 156) or (ARCH 161 and ARCH 164 and ARCH 156). Examination of the technological, social and environmental issues as they relate to architectural design.

ARCH 296. Architecture Studio IV. 4 credits, 9 contact hours (0;0;9).
Prerequisites: ARCH 295 or ARCH 263. A continuation ARCH 295.

ARCH 3. Architecture Elective. 3 credits, 3 contact hours (3;0;0).**

ARCH 301. Digital Modeling and Fabrication. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 156. The seminar in Digital Modeling and Fabrication is a 3-credit course for upper level students exploring advanced 3-dimensional computer modeling techniques and data export for assembly and fabrication to various computer numerically controlled (CNC) hardware available at the School of Architecture. Specifically, students engage in NURBS and solid modeling using Rhinoceros 3D and export data through various Rhino plug-ins including RhinoCAM, which writes G- and M- Codes for 2 and 3D milling operations. CNC hardware available as of Spring 2010 includes two (2) Universal Laser Cutters, each with 18" x 32" beds; two (2) Z-Corporation Z-310 3 dimensional printers; and a Precix 9100 Industrial CNC Router with a 48" x 96" bed. Students model and fabricate full scale assemblies individually and in teams and contribute to a final exhibition of student work. Familiarity with various software tools available at the College of Architecture and Design is encouraged but not required. Admission to the course to students in their second year of study by discretion of instructor.

ARCH 303. Structures I. 3 credits, 3 contact hours (3;0;0).
This course begins with the history of building structures, continues by introducing structural behavior, forces and responses in structural systems, and concludes with an introduction to static structural analysis.

ARCH 304. Structures II. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 303 or ARCH 229. This course examines lateral forces, foundations, stability, deflection, long spans and special case structural systems. Methodology involves advanced static structural analysis.

ARCH 309. Environmental Control Systems I. 3 credits, 3 contact hours (3;0;0).
Prerequisite: PHYS 102. This course covers the basic principles and applications of passive environmental systems utilizing on-site resources to achieve thermal and visual comfort as well as energy and water conservation. The topics include climate analysis, thermal comfort, thermal envelope, solar shading, passive solar heating, passive cooling, visual comfort, daylighting, and renewables. This course is the first of a two-course sequence in building environmental control systems (309, 314) focusing on passive (architectural) solutions, yet active (mechanical/electrical) solutions are covered in the second sequence.

ARCH 310. Co-Op Work Experience I. 3 credits, 3 contact hours (0;0;3).
Restriction: completion of the third year studio class, approval of the school and permission of the Office of Cooperative Education and Internships. Students gain major-related work experience and reinforcement of their academic program. A designated faculty member monitors and evaluates the student's work and project. Requirements include mandatory participation in seminars and completion of a report and/or project. Apply in third year.

ARCH 312. Environmental Education I. 3 credits, 5 contact hours (2;3;0).
Involves architecture students in working with grade school or high school students in the solution of a joint environmental design project. Participants first work toward developing their own understanding and sensitivity of the manmade environment. Emphasis on learner-directed and discovery-guided inquiry, and educational methods to increase awareness of the physical settings created for human activities. Projects developed in nearby schools which focus on the interaction of individuals and small groups with the environment.

ARCH 314. Environmental Control Systems II. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 309 or ARCH 227. This course provides students a deeper understanding of the relationship between architectural design and active building systems. The topics include heating and cooling systems, electric lighting design, electrical energy systems, acoustical systems, building water supply, plumbing systems, and fire protection. This course is the second of a two-course sequence in building environmental control systems (309, 314) focusing on active (mechanical/electrical) solutions.

ARCH 316. Structural Computer Applications BIM. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 304. The course explores the rising BIM technology with an emphasis on its structural applications as they relate to architectural design. The course also covers some structural computer applications using different types of computer programs. It is designed to help architecture students acquire and develop a more integrated approach to architecture. The course content consists mainly of some hands-on training projects in addition to some BIM related lectures. The lectures include some case studies such as the $611-million Nationals Park, in Washington, DC, illustrating how BIM can be successfully implemented. Various projects with different types of buildings will be used in the computerized applications.

ARCH 317. Advanced Architectural Graphics. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 296 or ARCH 264. Gives students advanced techniques for architectural expression in traditional media. A basic knowledge of drawing methods, media, materials and projection techniques is assumed.

ARCH 324. Landscape and Urbanism. 3 credits, 3 contact hours (3;0;0).
This course is about Urbanism, Landscape Architecture and the intersection of the two. Students will learn about landscape design in relation to the human condition and develop an understanding of how the design of the constructed urban environment is directly tied into, and affecting of the global climate and our environmental health. Students will learn about access, topography, surrounding buildings, natural systems, adjacent functions and zoning.

ARCH 331. Formal Principles of Landscape Design Traditions Across the Globe. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 211 or (ARCH 381 and ARCH 382). An overview of the opportunities and constraints of landscape designs. Emphasis on developing a practical understanding of the potentials of earth, water and plants in architecture. Students given an overview of social and ecological determinants of relations between land and buildings.

ARCH 332. Architecture: Image and Word I. 3 credits, 3 contact hours (3;0;0).
This course will present films on Architecture in which architects are speaking about and showing their own work. What we think is true about architecture is often wrong. Single images tend to abstract and greatly simplify why and how great architecture is created. Rarely are buildings seen in their content. Rarely are climatic, cultural and technical issues of design illustrated. AS a result, we often speculate about architecture based upon superficial or incomplete information.

ARCH 333. Architecture:Image and Word II. 3 credits, 5 contact hours (2;3;0).
This course will present films on Architecture in which architects are speaking about and showing their own work. Theoreticians provide "facts" to create a unified theory of design, which may lie outside the realm of historical reality, or the intention of the architect. The culture of architectural education and the nature of the design studio results in second hand knowledge, and design myth. Surveys of modern architecture leave a fragmentary memory of great works of architecture.

ARCH 335. Digital Tectonics. 3 credits, 3 contact hours (3;0;0).
This course uses 3D modeling tools to investigate the relationship of digital models to physical construction. The term digital tectonics refers to an idea regarding the qualities of works of contemporary architecture that seem to be influenced by the use of digital tools. In this course, students are asked to investigate this hypothesis by testing structure, skin, assemblage, form and space making methodologies that are aided by digital tools and rationalized through digital operations.

ARCH 337. Building Information Modeling. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 156 or AD 112. This course explores both technical and philosophical approaches to the use of the computer in architectural analysis, design development, information management, and document delivery. Autodesk Building Systems and Autodesk Revit Building will be used for 3D modeling and 2D documentation employing a systems-approach framework for spatial allocation, energy analysis, and structural considerations. The workings of the foundational information databases of the respective software will be thoroughly explored. Projects requirements will include building program resolution, solar analysis, asset scheduling, document layout, and design visualization. Proficiency with Autodesk Autocad (2D) and understanding of general CAD principles are required prerequisites.

ARCH 361. Adaptive Paradigms in Architecture. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 224. The course will focus on theories behind kinetic, responsive, and adaptive architecture. It will examine architecture in relation to the latest research in biology, material science, embedded systems, soft robotics, synthetic biology, bioengineering, and will address possible shifts in imagining and re-envisioning materialization of architecture. The course will underline architecture’s inseparable link to technology and speculate on new possibilities for architecture as an integrated, responsive, adaptive, and productive participant within larger ecologies.

ARCH 363. Architecture Studio III. 5 credits, 12 contact hours (0;0;12).
Prerequisites: ARCH 264, ARCH 251, ARCH 252, ARCH 223 or ARCH 541G, ARCH 227 or ARCH 543G and ARCH 229 or ARCH 545G. This course is a continuation of ARCH 264. Lecture hour explores the nature of technology, environment, and social order as they relate to studio work. Course materials purchase required.

ARCH 364. Architecture Studio IV. 5 credits, 13 contact hours (0;0;13).
Prerequisite: ARCH 363. A continuation of ARCH 363. Lecture hour explores in depth the nature of technology, environment, and social order as they relate to studio work. Students will be required to purchase course materials.

ARCH 381. History of Architecture III. 3 credits, 3 contact hours (3;0;0).
Prerequisite: ARCH 252. A continuation of ARCH 252, this course surveys global developments in architecture, urban planning, and landscape design in the first half of the 20th century. It examines the continued architectural impact of industrialization and modernization and the geo-political consequences of World War I and World War II on the built environment. The focus is on the development and diffusion of modernism and its relationship to such key concepts as universalism, regionalism, historicism, and utopia.

ARCH 395. Architecture Studio V. 4 credits, 9 contact hours (0;0;9).
Prerequisites: ARCH 224, and (ARCH 296 or ARCH 264), and ARCH 211 or (ARCH 381 and ARCH 382). This course is a continuation of ARCH 296.

ARCH 396. Architecture Studio VI. 4 credits, 9 contact hours (0;0;9).
Prerequisites: ARCH 395 or ARCH 363. A continuation of ARCH 395.

ARCH 4. Architecture Elective. 3 credits, 3 contact hours (3;0;0).**

ARCH 408. Investigations in the Contemporary Landscape. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 211 or (ARCH 381 and ARCH 382). Introduces the design, construction and management of contemporary landscape projects through case studies, field trips, and personal contact with prominent practicing landscape architects. A historical perspective of landscape architecture is used as a context for discussion.

ARCH 410. Co-Op Work Experience II. 3 credits, 3 contact hours (0;0;3).
Prerequisites: ARCH 310 or approval of the school and permission of the Office of Cooperative Education and Internships. Provides major-related work experience. A designated faculty member monitors and evaluates the student's work and project. Requirements include mandatory participation in seminars and completion of a report and/or project.

ARCH 423. Advanced Construction. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 224. In this course students will learn about the relationship of contemporary architecture and current developments in the building industry and how this translates into tectonic systems. The course introduces students to manufacturing processes, assembly processes of building systems offsite and onsite, unconventional building materials and forms of representations and documentation at the intersection of design and building processes.

ARCH 429. Advanced Structures. 3 credits, 3 contact hours (3;0;0).
Prerequisite: ARCH 304. This course covers advanced topics in structural analysis, design of reinforced concrete structures, design of steel connections, in addition to some topics in masonry structures. The course also includes design examples in relation to various types of foundation systems. It focuses on indeterminate structures in structural analysis and integrated structural systems in designing structures. Case studies of some well-known buildings are covered. Some BIM applications with computerized calculations are included.

ARCH 432. P3 Post Presentation Processing. 3 credits, 5 contact hours (2;3;0).
The project is deemed Architecture, with a capital A, but there remains nagging questions: What would the project be like if viewed stereoscopically? If it were rendered as a 360 degree panoramic view, what would the space be like? If it was accurately superimposed into the site (lighting, color, texture, camera angle), does the design improve when in the context? Would rendering styles using "natural media" be more descriptive? What would the architecture be like at night?.

ARCH 461. Resilient Structural Design and Construction. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 304. This course discusses the topic of structural building design and construction for various hazards such as earthquakes, high winds/hurricanes, and floods. Each type of hazard is discussed separately. The structural design process is outlined based on the requirements of the latest codes and standards. Guidelines and recommendations for better design and construction in hazard areas are given. Design examples are used to illustrate the various design methods along with some practical building design projects. The standard procedures used in the safety assessment and evaluation of damaged buildings in the aftermath of hurricanes and earthquakes are introduced.

ARCH 463. Options Studio I. 5 credits, 11 contact hours (0;0;11).
Prerequisites: (ARCH 396 or ARCH 364), (ARCH 304 or ARCH 329), (ARCH 314 or ARCH 327) and ARCH 324. Studio methodology allows the students to select from various building programs, the nature of design dealing with technology, environment and the social order. Lecture hour coordinates with studio subject matter. Course materials purchase required.

ARCH 464. Option Studio II. 5 credits, 11 contact hours (0;0;11).
Prerequisites: ARCH 396 or ARCH 364 and ARCH 304 or ARCH 329 and ARCH 314 or ARCH 327 and ARCH 324. Studio methodology allows students to select from various building programs, the nature of design dealing with technology, environment and the social order.

ARCH 472. Professional Practice I. 3 credits, 3 contact hours (3;0;0).
Restrictions: senior standing. Covers the essentials for programming a building and understanding the full scope of project development that precedes and follows the programming phase. Identify major stakeholders in the building design and production process and examine their roles. Lectures and assignments include: user requirements and client values, methods of pro forma analysis for project development and approval, and how the development process changes over time.

ARCH 475. Professional Practice II. 3 credits, 3 contact hours (3;0;0).
Restrictions: senior standing. A forum for examination of the structure and practices of the profession of architecture. The formal and informal relationships between architects, and between architects and clients, government officials, and consultants are studied. Basic principles of office management for the small and large architectural firm are introduced.

ARCH 483. ST:. 3 credits, 3 contact hours (3;0;0).
Prerequisites: ARCH 224, ARCH 304, ARCH 314 or (ARCH 323, ARCH 304, ARCH 327). Technology Elective.

ARCH 491. Independent Study. 1 credit, 1 contact hour (0;0;1).

ARCH 493. Independent Study. 3 credits, 3 contact hours (0;0;3).

ARCH 495. Advanced Architecture Studio I. 5 credits, 11 contact hours (0;0;11).
Prerequisites: ARCH 396 or ARCH 364, ARCH 304 or ARCH 329, ARCH 314 or ARCH 327, ARCH 324. Architectural Studios, which introduce design methods and processes that synthesis a range of design determinants while integrating technical requirements. Projects consider a variety of interrelated scales and conditions including: site, environment, user and regulatory requirements, accessibility and life safety, structural and environmental systems, building envelope design and performance, architectural and cultural history; all of which influence architectural design, both creatively and technically.

ARCH 506. Advanced Design Options II. 5 credits, 13 contact hours.
Prerequisite: ARCH 504G. Required vertical studio electives; must be taken sequentially. Covers arange of advanced design issues in depth: integration of organizational, social, technical, spatial, and aesthetic issues within consistently articulated applied design solutions.

ARCH 510. Co-op Work Experience III. 3 credits, 3 contact hours.
Restriction: Approval of the school and permission of the Office of Cooperative Education and Internships. Students gain major-related work experience and reinforcement of their academic program. Students are required to complete and present miterm and final projects and/or reports. A designated faculty member monitors and evaluates the student's work and project.

ARCH 530. Methods of Architectural Research. 3 credits, 3 contact hours.
Prerequisite: ARCH 211. This course examines the essential methodologies of architectural research directed towards advanced undergraduates in the professional program. Methods of research will include those related to qualitative and quantitative analysis, historical investigations, critical interpretation, archival and field work, and diverse approaches to design-as-research.

ARCH 531. History of Modern Architecture. 3 credits, 3 contact hours.
Prerequisites: ARCH 211. This course examines the major tendencies of architectural practice and theory in the 20th century. Formal and cultural evolution of modernism is considered in relation to social, political, economic, and technological developments that informed its key buildings, projects, and texts.

ARCH 533. History of American Architecture. 3 credits, 3 contact hours.
Prerequisite: ARCH 211. This course investigates the emergence and development of architecture and urbanism in what is now the United States, from before European contact to the early 20th century. Focus is on building typologies and urban morphologies that contributed to a definition of a distinctive "American" approach to form, style, and settlement. The complex and enduring influence of colonization, enslavement, industrialization, and immigration is emphasized throughout.

ARCH 534. Aspects of Urban + Suburban Form. 3 credits, 3 contact hours.
Prerequisites: ARCH 211 or (ARCH 381 and ARCH 382). This course examines major forms and patterns of urban and suburban development under modernity, focusing on the industrial and metropolis and its global influence. Changing concepts of the central city and the metropolitan periphery are examined in relation to cultural, socio-economic, and political developments.

ARCH 535. History of Architectural Ideas. 3 credits, 3 contact hours.
Prerequisites: ARCH 211 or (ARCH 381 and ARCH 382). Discusses seminal architectural ideas in the western world from Vitruvius to the present day. Read books written by leading architectural theorists and analyze them in detail.

ARCH 536. Landscape and American Culture. 3 credits, 3 contact hours.
Pre or Corequisites: ARCH 324. As in architecture, the parallel discipline of landscape architecture involves aesthetic intention set in conjunction with utilitarian concerns. As such, designs on the land include the integration of the arts and sciences of human culture with nature. Discusses landscape as a manifestation of American culture.

ARCH 537. Cable and Tension Structures. 3 credits, 3 contact hours.
Prerequisites: ARCH 304 or ARCH 329. The course covers the structural technology, history and design considerations of cable-suspended, cable-stayed, tensioned fabric and air-supported structures, and the use of light-tensile structures in architecture. The course also offers an overview of the engineering standards that provide guidelines and recommendations for their design. A long list of well-known cable and tensioned fabric structures will be used to illustrate the structural design concepts. The examples focus mainly on buildings and roof structures. The tensioned fabric roof examples include some of the impressive projects of Geiger Berger Associates and Horst Berger Partners who pioneered the evolution of tensioned fabric structures in the US and elsewhere.

ARCH 538. Sustainable Architecture. 3 credits, 3 contact hours.
Prerequisites: ARCH 314 or INT 222. Follows two precepts: accepting responsibility for the consequences of design decisions upon human well-being, and the long-term viability of natural systems. Topics include sustainable site design and development, environmentally sensitive building materials, lifecycle assessment and cost benefit analysis of building systems, and adaptive reuse.

ARCH 541. Material Systems in Design. 3 credits, 3 contact hours.
Prerequisites: ARCH 396. This seminar will allow students to examine material systems that give design agency to matter as a creative and technical force in the making of architecture. In doing so, it will provide students an opportunity to understand and explore the role materials play in contemporary architectural theory and praxis. Focused on the exploration and understanding of material systems, this course will provide students with the intellectual underpinnings for the reconceptualization of matter within their design projects.

ARCH 543. Lighting. 3 credits, 3 contact hours.
Prerequisites: ARCH 314 or INT 222. This elective explores light (both electric lighting and daylight) as a design tool and as a medium. The goal is for each student to acquire a familiarity and working knowledge of the basic concepts and tools of lighting design, lighting/lamp/load types, lighting products/fixtures, lighting controls, the lighting industry, applicable codes, and lighting sustainability. The class will review resources used by interior designers, architects, engineers and lighting designers to create and specify lighting solutions that enhance and complement their designs of residential, commercial, institutional, and outdoor environments.

ARCH 545. Case Studies in Architectural Technology. 3 credits, 3 contact hours.
Prerequisite: ARCH 224. Technological systems involved in the construction and use of buildings. Students conduct in-depth investigation of technology-related problems in architecture and construction. Case study method is used. Construction documents and reports are analyzed. Field visits are required.

ARCH 546. Designing and Optimizing the Building Enclosure. 3 credits, 3 contact hours.
Prerequisite: ARCH 224. Considers the building envelope, the boundary dividing the inside of a structure from the outside environment. Study and design optimal enclosures considering energy exchange, the relationship between energy and light, and life cycle costs.

ARCH 557. Problems in Modern Housing. 3 credits, 3 contact hours.
Prerequisite: ARCH 211. Attempts to provide decent, affordable and well-designed housing for broad segments of society are examined. Dwelling is examined through analysis of proto-typical design solutions in urban environments.

ARCH 559. Social Issues in Housing. 3 credits, 3 contact hours.
Prerequisites: ARCH 211 or (ARCH 381 and ARCH 382). Lecture/seminar explores the historical, economic, social, technological, and political basis for current American housing policy and practice. Examines government, community-based and private sector attempts, both failed and successful, at providing decent, affordable, and well-designed housing for broad segments of society. Student teams analyze and discuss, in a series of classroom debates, the housing and planning implications of controversial social problems from homelessness and racial segregation to caring for the elderly and people with HIV/AIDS with an emphasis on the role of the architect.

ARCH 561. Synthesis Seminar. 3 credits, 3 contact hours.
Prerequisite: ARCH 495. Design research, analysis, application and presentation of the contextual, programmatic, regulatory and technical aspects of professional architectural practice as applied to an architectural design project in the Advanced Architectural Studio II.

ARCH 566. Advanced Architectural Design Studio. 5 credits, 12 contact hours.
Prerequisite: ARCH 564. This is an advanced architectural design studio, post Comprehensive Studio, studying contemporary design theories, design methods and construction technologies. Emphasis is placed upon independent design research as it relates to the broad range of architectural practice. Exploratory and experimental architectural projects are the focus of the course.

ARCH 571. Sustainable City. 3 credits, 3 contact hours.
Prerequisites: ARCH 110. This course will focus on sustainability issues (economic, social and environmental) at an urban scale. The course will provide an overview of existing frameworks and goals and speculate on solutions. This course will focus on recent descriptions and critiques of urban space and proposals for change.

ARCH 572. Mapping Urbanism. 3 credits, 3 contact hours.
Prerequisites: ARCH 211. This seminar provides the critical tools necessary to examine the city as both a representation and a reality in flux. Through an interdisciplinary framework, students study urban history, theory, visual thinking and information design. Parallel to learning about global cities, their urban challenges, and transformative design strategies, students learn to employ a diverse set of representational techniques to create inventive mappings.

ARCH 574. Case Studies in Community and Urban Design. 3 credits, 3 contact hours.
Prerequisites: ARCH 396 or ARCH 364. In-depth investigation of specific real-world problems of urban or community design carried out using case method approach. Current practices in the U.S. and other countries studied using interviews with designers, developers, community groups and government agencies. Site visits, reports and other documents provide important sources of information. Final report with supporting documentation required.

ARCH 576. Architecture of Utopia. 3 credits, 3 contact hours.
Prerequisites: ARCH 211. Seminar for the review of utopian projects that have attempted to embody and strengthen social ideas through transformations in the structuring of space. Architectural implications of different literary and philosophical utopias analyzed with an emphasis on those experimental proposals which were realized, in whole or in part, in built form.

ARCH 583. ST:. 3 credits, 3 contact hours.
Group investigation of problem of special interest in architecture.

ARCH 591. Independent Study. 1 credit, 1 contact hour.

ARCH 592. Independent Study. 2 credits, 2 contact hours.

ARCH 593. Independent Study. 3 credits, 3 contact hours.

ARCH 595. Advanced Architecture Studio II. 5 credits, 11 contact hours.
Prerequisites: ARCH 495 or ARCH 563. Corequisites: ARCH 561. Architectural Studios developing require design proposals that synthesis a diverse range of design determinants while integrating technical requirements and performance. Projects consider a variety of interrelated scales and conditions including: site, environment, user and regulatory requirements, accessibility and life safety, structural and environmental systems, building systems design and performance, architectural and cultural history; all of which influence architectural design, both creatively and technically.