ARCH - ARCHITECTURE

ARCH Class Schedule (https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/ARCH/)

Courses

ARCH 101 Introduction to Architecture credit: 2 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/101/)
Introduction to architecture, the architectural profession, and its allied fields emphasizing the value of architecture to society and human behavior. Contemporary problems in architectural design, including an overview of building components and systems, sustainability, urbanism, fabrication, history and preservation, health, and social justice.

ARCH 171 Introduction to Design I credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/171/)
The principles of architectural composition including form, space, and order are introduced. Students explore architectural precedents and design conceptualization. Students will apply two- and three-dimensional analog representation through sketching, drawing, analytical diagramming, and physical modeling.

ARCH 172 Introduction to Design II credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/172/)
Principles, concepts and theories of architectural design and their spatial experience are explored. Students are introduced to methods of observation and documentation of the environment and associated activities and behaviors. Students develop techniques for analyzing and designing relationships between programs, people, and places. Prerequisite: ARCH 171.

ARCH 199 Undergraduate Open Seminar credit: 1 to 5 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/199/)
May be repeated.

ARCH 200 Construction History credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/200/)
Construction History explores 4500 years of human construction, focusing on materials, engineering, and fabrication. It provides an alternative narrative to traditional architecture, linking economics, industry, labor, engineering, and related disciplines. Lectures cover material typologies, production methods, and how they've influenced design, the evolution of building science, and the impact of technology on architectural aesthetics and ethics. The course concludes by examining contemporary design and technology issues. Credit is not given toward graduation for: ARCH 200 and ARCH 403 section CH.
This course satisfies the General Education Criteria for:
Humanities - Hist Phil

ARCH 210 Introduction to the History of World Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/210/)
An introduction to the history of World Architecture, Urbanism, and the built environment from pre-history to the present; in addition to examining the formal properties of global architecture, this course explores buildings and cities in their cultural, social, political, and religious contexts. Prerequisite: Sophomore standing or consent of instructor.

ARCH 211 Transformations in African Centered Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/211/)
Evaluates the development of African design from a multi-disciplinary approach, utilizing key theories from the fields of Art History, Architecture, African Studies, History, Anthropology and Urban Planning. From these perspectives, we will study how culture, traditions, aesthetics, religion, politics, economics and geography shaped and influenced the design and construction of Africa's past and present built environment. Credit is not given toward graduation for: ARCH 211 and ARCH 490 section ACA.

ARCH 222 Islamic Gardens & Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/222/)
Same as ARTH 219 and LA 222. See LA 222.
This course satisfies the General Education Criteria for:
Humanities - Hist Phil
Cultural Studies - Non-West

ARCH 231 Anatomy of Buildings credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/231/)
A holistic approach to the introduction of architectural technology. Enabling students to integrate technical material with design, this lecture/lab course addresses building codes, zoning, construction documentation and delivery, digital fabrication, and the impact of energy, sustainability, and environmental forces on building construction, comparing general principles of light frame and heavy construction materials, components, and systems. Students learn how to build virtually and physically, understanding the roles design and construction professionals play on integrated teams.

ARCH 232 Structural Fundamentals credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/232/)
The study of forces, their distribution, and their impact on building structure. Topics include: equilibrium of rigid bodies in two and three dimensions; trusses; shear and bending moments in beams; arches and frames; stresses, strains, and deformations in axially loaded members; direct shear and bearing stresses; torsion; beam stresses and deflections; introduction to the design of structural members; and architectural applications. Prerequisite: MATH 220 or MATH 221, and MATH 231 or PHYS 101.

ARCH 237 Urban Scale Sustainability credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/237/)
Focuses on understanding and conceiving holistic approaches to urban-scaled sustainability challenges, by looking at environmental, economic, and social factors affecting built environments. Emphasis is placed on illustrating individual and collective social roles in producing healthy and robust communities, currently challenged by climate change and environmental degradation. Students will investigate and propose actions ranging from simple gestures like reducing, reusing, and recycling, to highly complex neighborhood, city, and regional design decision-making and policy implementation.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

ARCH 273 Fundamentals of Design I credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/273/)
Context as a key influence in architectural design. Students expand on the methods of documentation and analysis of social, physical, and ecological factors to formulate design strategies and processes using analog and digital tools. Prerequisite: ARCH 172. Restricted to architectural studies majors.

ARCH 274 Fundamentals of Design II credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/274/)
Introduces urban systems and conditions. Students expand their knowledge of social, political, economic, and environmental characteristics and are introduced to cartographic methods of urban analysis. Students investigate urban experience and use environmentally aware design processes to formulate design interventions. Prerequisite: ARCH 273. Restricted to architectural studies majors.

ARCH 315 History of Modern Landscape Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/315/)
Same as LA 315. See LA 315.

ARCH 321 Environment, Architecture, and Global Health credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/321/)
This course surveys current research at the intersection of the built environment, health, and well-being. It emphasizes relationships among people and multiple scales of the environments they inhabit and the health and well-being consequences of these relationships. It comparatively examines these relationships within a broad range of Western and Non-Western cultures and contexts by introducing significant historical and contemporary theories, data of relevance, research processes, and applications in environmental design and planning processes. To improve person-environment fit, the roles of social groups, institutions, and organizations in the person-environment-health/well-being nexus within various cultural and geographic contexts are examined and compared.

ARCH 371 Intermediate Design I credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/371/)
Investigates individual and collective architectural habitats. Students examine the effects of environmental context, cultural perspectives, and multi-sensory perceptions in living conditions. Students design livable, integrated, and inclusive habitats considering universal design, accessibility, and life safety. Prerequisite: ARCH 274. Restricted to architectural studies majors.

ARCH 372 Intermediate Design II credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/372/)
Investigates the design of complex urban contexts at multiple scales. Students apply theoretical and analytical methods to understand and represent the social, cultural, and civic conditions present in and between the private and public realms. Students design an urban project that activates public space as part of the social and city fabric. Prerequisite: ARCH 371. Restricted to architectural studies majors.

ARCH 401 Independent Study credit: 0 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/401/)
Independent guided study and investigation in a selected area of architecture. 0 to 4 undergraduate hours. 0 to 4 graduate hours. Approved for both letter and S/U grading. May be repeated. Prerequisite: Junior standing in architecture, written proposal approved by a sponsoring faculty member and the approval of the Director of the School.

ARCH 402 Introduction to the History of Architectural Theory credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/402/)
Architectural theory, criticism, and historiography from antiquity to the present. Based on close readings of texts from antiquity to the present day. 3 undergraduate hours. 3 graduate hours. Prerequisite: ARCH 210 or consent of instructor.

ARCH 403 Special Topics in Architectural History credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/403/)
Special topics in Architectural History courses. Topics and subject matter to be published in course listings. 3 undergraduate hours. 3 graduate hours. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: ARCH 210 or consent of instructor.

ARCH 407 Rome: City of Visible History credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/407/)
Rome's many layers show the intersection of multiple periods of architecture and the effects of politics, economics, religion, and culture on its urban context. This course considers Rome from its foundation until today, examining its urban form as well as individual monuments and their arts. We will employ a variety of evidentiary materials: individual monuments, maps, photographs, films, prints, and primary texts. Same as ARTH 407. 3 undergraduate hours. 3 graduate hours. Prerequisite: Sophomore standing.

ARCH 409 Studies in Spanish Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/409/)
Explores aspects of the architecture and urban design of Spain from antiquity until the present. 3 undergraduate hours. 3 graduate hours. May be repeated to a maximum of 6 hours. Prerequisite: ARCH 210.

ARCH 412 Medieval Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/412/)
Introduces the architecture, monumental arts, and urbanism of Byzantium and medieval western Europe from c. 300-1500, using a comparative approach. We will learn about Byzantium's domed churches and robust cities, Europe's Romanesque monasteries and pilgrimage destinations, and its soaring Gothic cathedrals, fortresses, and cities. It integrates architecture with the study of the roles of secular and ecclesiastical authority, design and technological developments, religious performance and observance, warfare and trade between regions, and developing urbanism. Same as ARTH 412 and MDVL 412. 3 undergraduate hours. 3 graduate hours. Prerequisite: ARCH 210 or ARTH 111.

ARCH 415 Modernity's Mirror: Nineteenth-Century Architecture 1750-1900 credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/415/)
Examines architecture and urbanism in the long nineteenth century (c1750-1900), focusing on Europe and North America. Significant attention will be paid to architectural responses to rapid technological and social changes, including industrialization and the rise of consumer culture, nationalism and colonialism, migration and urbanization, and changes to class and gender norms. We will also consider ancient and medieval architectural revivalism as anchors for political, social, and cultural meaning in the modern world. Same as ARTH 438. 3 undergraduate hours. 3 graduate hours. Prerequisite: ARCH 210 or ARTH 112, or consent of instructor.

ARCH 416 The Architecture of the United States, c.1650 to Present credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/416/)
This course surveys the architecture and urbanism in the territory of the present-day United States from c.1650 CE forward. Topics include Native American urban centers; the diverse national origins of colonial architecture; the ongoing significance of vernacular forms; the search for an architecture of democracy; the architecture of slavery; industrialization and the built environment; the Great Migration, urbanization, and architecture; the rise of a formal architectural profession; Modernist architectures in the U.S.; architecture, real estate, and the forces of capital investment; new technologies and the built environment. 3 undergraduate hours. 3 graduate hours. Prerequisite: ARCH 210, ARTH 112, or consent of instructor.

ARCH 417 Modern and Contemporary Global Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/417/)
This course surveys the comparative history of world architecture and urbanism from c1900 to the present, including Modernist, postmodernist and contemporary architectures. Themes include the rise of new typologies, materials and techniques; the centrality of utopian thought, both built and imagined; architecture's role in forging emerging national and postcolonial identities; architecture as visual communication; the rise of spectacle and the privatization of public space; adaptive reuse and emerging discourses of sustainability. 3 undergraduate hours. 3 graduate hours. Prerequisite: ARCH 210 or ARTH 112, or consent of instructor.

ARCH 418 History of the Urban Environment credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/418/)
Examines the evolution of town planning and urban design from prehistory to the present; studies cultural and technical advancements affecting the form of the urban environment. 3 undergraduate hours. 3 graduate hours. Prerequisite: ARCH 210 or consent of instructor.

ARCH 419 Historic Building Preservation credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/419/)
Introduces historic preservation: legal, financial, and administrative assistance, graphic examination of restored buildings and sites, and application of conservation technology. 3 undergraduate hours. 3 graduate hours.

ARCH 424 Gender & Race in Contemp Arch credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/424/)
Analyzes how the built environment reflects social attitudes towards gender and race. Identifies the work of women and people of color in architecture and related disciplines as consumers, critics, and creators of the environment. Provides links with valuable professional networks in Chicago and elsewhere. Same as GWS 424. 3 undergraduate hours. 3 graduate hours. Prerequisite: Consent of instructor.

ARCH 433 Design of Steel and Reinforced Concrete Structures I credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/433/)
Loads and load combinations; design methods/structural safety; steel as a structural material; design of structural steel members subject to tension, compression, bending, and shear. Reinforced concrete as a structural material; design for bending, shear, and serviceability; introduction to design of columns. 4 undergraduate hours. 4 graduate hours. Prerequisite: ARCH 232. Restricted to undergraduate and graduate students in the School of Architecture.

ARCH 434 Environmental Control Systems I credit: 5 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/434/)
Study of the control of thermal, luminous, and sonic environments with an emphasis on passive means of controls. Specific topics include: thermal comfort and behavioral implications; fundamentals of thermal behavior of buildings; the principles of heat and moisture in buildings; lighting fundamentals; light sources; effects of lighting on comfort and performance; energy economy and sustainability; acoustic fundamentals; room acoustics; noise control; basic electrical, plumbing, vertical transportation, and life safety systems. 5 undergraduate hours. 5 graduate hours.

ARCH 435 Structural Systems and Construction Methods credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/435/)
Presents a unified approach to architectural structures and construction technology to enable students to integrate design, engineering, and construction, while providing an understanding of how material/component/system decisions impact the work of architects, engineers, and constructors. Using a series of case-studies and project-based assignments, students learn about the various structural systems and construction methods used in the design of buildings. The evolution and state-of-the-art in structure and construction strategies will be discussed to provide requisite breadth and depth. Topics covered include: structural and building codes; structural systems and their layout planning; foundation systems; construction methods and technologies in wood, steel, concrete, and masonry; sustainability considerations; detailing; and digital modeling. 4 undergraduate hours. 4 graduate hours. Prerequisite: ARCH 231, ARCH 232 and ARCH 433.

ARCH 468 Overseas Architectural Studies credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/468/)
This course is designed to enrich the professional development of students in a study abroad location. Students participate in thematic workshops, seminars, lectures and field trips focused on understanding and analyzing architectural and urbanistic landmarks and settings on site through both directed and independent assignments. 3 undergraduate hours. No graduate credit. May be repeated in separate terms up to 6 hours. Prerequisite: Senior standing in the School of Architecture.

ARCH 471 Fundamentals of Arch Design credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/471/)
Basic architectural design methods, fundamentals, principles and concepts including creative problem solving in two- and three-dimensions. 6 undergraduate hours. 6 graduate hours. Prerequisite: Limited graduate standing in Architecture and concurrent enrollment in ARCH 231.

ARCH 472 Arch Des in Landscape & Cities credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/472/)
Intermediate architectural design methods, fundamentals, principles and concepts focusing on buildings in landscape and urban contexts. 6 undergraduate hours. 6 graduate hours. Prerequisite: ARCH 471. Concurrent enrollment in ARCH 232.

ARCH 473 Advanced Design I credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/473/)
Integrates building systems into the architectural design process. Students apply technical aspects, such as structural, environmental, energy, and enclosure systems, as well as qualitative performance parameters related to human experience to a building. 6 undergraduate hours. 6 graduate hours. Prerequisite: ARCH 372. Restricted to architectural studies majors.

ARCH 474 Advanced Design II credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/474/)
Integrates principles of building construction into the architectural design process. Students integrate materiality, fabrication, constructability, and detailing into their projects. Explorations increase in both program and context complexity. The investigations include both technical and theoretical aspects of design. 6 undergraduate hours. 6 graduate hours. Prerequisite: ARCH 473. Restricted to architectural studies majors.

ARCH 481 Concepts and Theories of Architectural Design credit: 1 to 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/481/)
The first in a series of four introductory courses exploring the theoretical and practical foundations architecture and the built environment. This course introduces basic theories of architecture. It creates awareness of design concepts. Course content is arranged in three topical areas: Architecture and People, Architecture and Place, and Making Architecture. Each topical area addresses roles of designers and architects in contemporary and historical perspectives. No undergraduate credit. 1 to 3 graduate hours. Prerequisite: Restricted to graduate students.

ARCH 482 Drawing and Modeling credit: 1 to 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/482/)
This course explores the theoretical and practical foundations of architecture and the built environment. It provides an introduction to the architectural graphic communication skills that architects use to visualize, analyze, and record creative thoughts including freehand sketching, architectural delineation, and digital applications. No undergraduate credit. 1 to 3 graduate hours. Prerequisite: Restricted to graduate students.

ARCH 483 Strategies of Architectural Design credit: 1 to 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/483/)
Strategies of Architectural Design focuses on understanding the importance of site in relationship to human scale and the built environment through precedent analysis of typology, street, block and neighborhood. In addition, students will be introduced to basic strategies of architectural design and how these strategies are implemented through tectonics and materiality. No undergraduate credit. 1 to 3 graduate hours.

ARCH 484 Representation credit: 1 to 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/484/)
This course develops understanding of how architects represent ideas, values and meaning in the built environment. The course focuses on three topic areas; • analysis and representation of existing contexts, including climate, built environment and natural features • 2d and 3D graphic communication techniques and tools • analog and digital modeling techniques and tools. Students will be introduced to multiple relevant software tools and acquire basic skills in each. No undergraduate credit. 1 to 3 graduate hours.

ARCH 485 The Architecture of Graphic Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/485/)
Architecture of Design explores the fundamental systems and principles of graphic design, with a strong emphasis on digital media. It covers essential concepts such as color theory, contrast and balance, visual hierarchy, figure-ground relationships, composition fundamentals, and typographic systems. Additionally, learners delve into the creation of icons, brands, logos, and data visualization techniques. Participants engage in weekly exercises designed to enhance practical skills, fostering a deeper understanding and mastery of graphic design principles. 3 undergraduate hours. 3 graduate hours. Credit is not given toward graduation for: ARCH 485 and ARCH 490 section AGD.

ARCH 490 Special Topics in Contemporary Architecture credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/490/)
Selected topics in and applications of contemporary architecture; see Class Schedule or department office for current topics. 1 to 4 undergraduate hours. 1 to 4 graduate hours. May be repeated in separate terms up to 12 undergraduate hours or 8 graduate hours, if topics vary. Prerequisite: Consent of instructor. For majors only.

ARCH 491 Arch Professional Internship credit: 0 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/491/)
Full-time or part-time professionally supervised field experience in design intended to introduce students to the practice of architecture in a commercial firm or agency of government. Students work in the school-approved firm or agency of their choice. Written work reports and reflective experiential learning reports are required. 0 undergraduate hours. 0 graduate hours. Approved for S/U grading only. May be repeated in separate terms a maximum of 3 times. Prerequisite: Restricted to graduate standing or upper-level undergraduate standing, or consent of instructor. For students enrolled in the BSAS and M.Arch. programs of study only.

ARCH 498 Directed Research in Arch credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/498/)
Participation in on-going research projects which may include energy management, environmental perception, facilities development, building science, and other topics. 1 to 4 undergraduate hours. 1 to 4 graduate hours. May be repeated to a maximum of 8 hours. Prerequisite: Approval of written proposal by instructor and Director of School.

ARCH 499 Off-Campus Study credit: 0 to 12 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/499/)
Provides opportunity for approved off-campus study. Detailed proposal for study off campus must be submitted for approval to the appropriate committee in the School prior to such study. Final determination of credit and its application toward the degree is made after a review of the student's off-campus work by the above committee and the Director of School. 0 to 12 undergraduate hours. 0 to 12 graduate hours. Approved for both letter and S/U grading. Prerequisite: Senior or graduate standing in architecture and approval of program prior to registration.

ARCH 501 Architectural Practice credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/501/)
Role of the architect in the building enterprise, professional ethics, and the conduct of professional practice; legal aspects of architectural practice and building construction; introduction of business management, marketing, operational procedures, financial planning, and cost control of architectural practices; and the administration of construction contracts. Prerequisite: Graduate standing or consent of instructor.

ARCH 510 History of World Landscapes credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/510/)
Same as LA 513. See LA 513.

ARCH 511 Seminar in Ancient Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/511/)
Seminar on topics in ancient architecture.

ARCH 512 Seminar in Medieval Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/512/)
Seminar on topics in medieval architecture and urbanism. Same as MDVL 512. May be repeated to a maximum of 12 hours in separate terms. Prerequisite: ARCH 412 or equivalent as determined by the instructor.

ARCH 513 Sem in Ren & Baroque Arch credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/513/)
Seminar on topics in European architecture from the fifteenth through the eighteenth centuries.

ARCH 515 History & Theory of Modern Landscape Architecture credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/515/)
Same as LA 515. See LA 515.

ARCH 516 Seminar in Modern Arch History credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/516/)
Seminar on topics in architectural history from 1800 to the present. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: ARCH 415, ARCH 416, or ARCH 417.

ARCH 517 Modern Architectural History, 1850-Present credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/517/)
Survey of significant buildings, movements, and figures of modern and contemporary architecture, contextualized in the social, cultural, political, economic, and technological developments of their time. It outlines the development of Modernist, postmodernist, and contemporary architectural thought. Key themes include industrialization and modernization, the development of global Modernisms and postmodernism in the twentieth-century, regionalism, globalization, the sustainability movement, and the development of digital technologies in architecture. Prerequisite: ARCH 210, an equivalent course, or consent of instructor.

ARCH 518 Recording Historic Buildings credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/518/)
Examines techniques for recording historic buildings and sites: measuring, photographing, and drawing to Historic American Building Survey standards; taking field notes and investigating public records to document reports. Prerequisite: ARCH 419 and demonstrated ability in architectural graphics; or consent of instructor.

ARCH 519 Conserv of Building Materials credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/519/)
Examination, analysis, and pathologies of building materials and techniques for treatment and repair of historic buildings. Emphasis is on conservation of traditional masonry, concrete, and metals. Field trips and lab work. To receive 4 hours credit, students must participate in lab. Prerequisite: ARCH 419.

ARCH 521 Applications in the Built Environment, Architecture and Global Health and Well-Being credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/521/)
Addresses topics at the intersection of environmental conditions and human health around the globe and engages students in reading, discussing, and applying the results of the latest research and translational studies linking environmental design to health in a range of diverse cultural contexts. Students consider the application of research to everyday practices and decision making, as well as to professional design, planning, and community health practices and engage in a secondary-source research project. Prerequisite: Restricted to graduate students or consent of the instructor.

ARCH 522 Advanced Research in Environment, Architecture & Global Health credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/522/)
This course examines seminal and current research at the intersection of environmental conditions and human health globally. It introduces techniques for locating and interpreting research, and synthesizing findings. Students explore a range of epistemologies and research ontologies, compare results and utility for health-focused architectural and environmental design and policy interventions. Students apply research to professional design, planning, and community health-focused problems and decision making, and engage in a secondary-source research project and its dissemination. Prerequisite: ARCH 321, ARCH 521, or consent of instructor. Restricted to graduate students.

ARCH 523 Architecture and Medicine credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/523/)
Outlines the historical development of the hospital in tandem with changes in medical knowledge and practices and provides a critical review of research that links principles in healthcare design to process and outcome variables. Students reflect on applications of science to design decision-making and engage in a research project. 4 graduate hours. Same as BSE 603. 4 professional hours. Approved for both Letter and S/U grading.

ARCH 525 Project-scale Health Impact Assessment credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/525/)
Introduces a Health Impact Assessment (HIA), a public health tool used to consider the potential health impacts of prospective plans, programs, and policies that may not conventionally include health outcomes in the decision-making process. Students will learn the values and principles underpinning HIA, the steps required to complete an HIA and appropriate methods and approaches for each step. While historically employed in policy evaluation, public health, and community planning, HIA is a new tool to consider at the scale of site and building design. Students will develop capacity to employ this tool during pre-design and in the design process for architectural projects. Through this course, students will gain an understanding of the importance of engaging a breadth of project target audiences in the HIA process, as well as the use of HIA as a tool to address health inequities across impacted groups. Students will undertake an HIA project. Prerequisite: Successful completion of ARCH 321 or ARCH 521. Graduate standing or permission of instructor.

ARCH 534 Building Economics credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/534/)
Study of factors affecting cost of building including: the building market, construction cost, estimates and cost control, time value of money and building life-cycle cost, measuring the worth of investments, depreciation and tax consideration of cash-flows. Prerequisite: Graduate standing or consent of instructor.

ARCH 535 Design of Tall Buildings credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/535/)
Introduction into tall building design, including design process and phases; architectural design, components, and planning; structural systems; wind engineering and using the wind tunnel; mechanical/electrical/plumbing systems and components; sustainability; and materials and construction.

ARCH 536 Planning and Design of Structural Systems credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/536/)
This course addresses the selection, planning, and preliminary design of structural systems for buildings. Emphasis is on understanding structural systems and their components as part of an integrated building system. Topics covered include a review of concepts from statics and strength of materials, structural requirements of strength-stiffness-stability, structural planning considerations, gravity loads and systems, lateral loads and systems, soils and foundations, and cable-net and other facade systems. Prerequisite: ARCH 232 and ARCH 433 or consent of instructor.

ARCH 537 Environmental Control Systems II credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/537/)
This course investigates the control of thermal and luminous environments with an emphasis on active means of controls and building envelope design. Specific topics include: heating and cooling load and energy calculations; primary (boilers, chillers, etc.) and secondary (comfort delivery) mechanical systems; indoor air quality; energy, lighting, and daylighting codes and metrics; electric lighting properties, selection, design, and calculations; advanced daylighting strategies and calculations; visual comfort assessment; curtain wall and masonry systems; and rain screen principles. Prerequisite: ARCH 434 or consent of instructor.

ARCH 538 Integrative Design of Buildings credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/538/)
This advanced course emphasizes understanding of the organizational and functional principles of buildings and their subsystems as a means of accomplishing desired project goals, and to develop the creative ability of designing buildings of great functional synergy and organizational coherence, thus creating maximal value. Specifically, the course aims at 1) understanding the functional and organizational principles of the requisite building systems, 2) understanding their inter-system relationships, organizational variations, and their implications on overall design and construction, and 3) developing comprehensive integrative design ability for maximum value creation. Prerequisite: ARCH 536 and ARCH 537.

ARCH 550 Design of Steel and Reinforced Concrete Structures II credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/550/)
Analysis and design of structural steel members subject to combined forces; analysis and design of bolted and welded joints, and simple connections. Presentation of reinforced concrete slab and roof systems and their characteristics; design of one-way slab-joist systems; design of multi-span reinforced concrete beams under pattern loading; influence lines and practical design of continuous beams; deflection of reinforced concrete beams and slabs; development length and bar cut-offs; design of short and slender reinforced concrete columns including biaxial bending. Prerequisite: ARCH 433. Restricted to graduate students in the School of Architecture.

ARCH 551 Structural Analysis credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/551/)
Advanced problems in the analysis of statically determinate structures; general theories and methods of analysis of statically indeterminate structures by geometric and energy methods; and introduction to theory of plastic design. Prerequisite: ARCH 232 and ARCH 433.

ARCH 552 Soil Mech and Foundations credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/552/)
Soil properties and site exploration; stresses in soils; soil consolidation and settlement; shear strength of soils; bearing capacity; design of spread and combined footings; mats; pile foundations; lateral soil pressure and retaining walls. Prerequisite: ARCH 551.

ARCH 553 Advanced Reinforced Concrete Design credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/553/)
Strengthening, evaluation, and repair of existing structures; design of two-way slab systems using direct design method; design of two-way slab systems using equivalent frame method; design of post-tensioned concrete systems; design of shear walls; design of deep beams. Prerequisite: ARCH 550; ARCH 551; credit or concurrent registration in ARCH 560 or consent of instructor. Restricted to graduate students in the School of Architecture.

ARCH 554 Adv Steel Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/554/)
Advanced topics in the design of steel structures; critical study of the AISC specification; design of steel members and their connections; composite structures; and the analysis and design of continuous structures and tall buildings. Prerequisite: ARCH 560 or consent of instructor.

ARCH 555 Prestressed Concrete Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/555/)
Theory and design of prestressed concrete structures and suspension shell structures. Prerequisite: ARCH 553 or consent of instructor.

ARCH 556 Advanced Structural Planning credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/556/)
Study of the loads, functional and spatial requirements, and construction problems in the selection and design of structural systems for buildings; cost estimates; and integration of mechanical and electrical equipment. Prerequisite: ARCH 552 and ARCH 553; credit or concurrent registration in ARCH 554 and ARCH 555, or consent of instructor.

ARCH 557 Seismic Analysis and Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/557/)
This course introduces the basic concepts of seismology, vibration theory, and their relevance to building structural design. The course gives students the opportunity to understand the codes and their application. The class will explore seismic forces and distribution in a building through computer modeling, calculation-based exercises, and two projects. Prerequisite: ARCH 551 or ARCH 536 or consent of instructor. Students may be concurrently enrolled in ARCH 551.

ARCH 558 Structural Wood Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/558/)
Analysis and design of wood structures for buildings; response of wood buildings to gravity and lateral loads; design of structural elements: beams, columns, beam-columns, members in tension, and trusses using NDS specifications; connections; plywood panels; diaphragms and shear walls. Prerequisite: ARCH 232 or equivalent.

ARCH 560 Advanced Structural Analysis credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/560/)
Advanced theory and analysis of statically indeterminate structures, recognizing effects due to temperature, settlement, and fabrication errors; matrix methods focusing on computer analysis techniques; introduction to plastic analysis and design. Prerequisite: ARCH 551.

ARCH 563 Human-centric Research for Designed Environments credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/563/)
Introduces research methods and techniques for investigating the relationship between people and designed environments they inhabit. Approaches for gathering and analyzing social and behavioral data are introduced. Results are applied as evidence in environmental design decision-making to achieve healthier environments. Same as LA 563. Prerequisite: Graduate standing in architecture, landscape architecture, or urban and regional planning or consent of instructor.

ARCH 571 Design: Detail and Architectonics credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/571/)
Design studio investigations of multiple techniques and methodologies addressing the design and fabrication of small-scale architectural constructions, explorations of specific sites and places, and interdisciplinary projects. Field trips may be required. Shop safety orientation required. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: Graduate standing or consent of instructor.

ARCH 572 Design: Health and Well-being credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/572/)
Design studio explorations responding to social, economic, political, and behavioral dimensions of human existence and settlement to encourage healthier designed environments. Projects investigate the experience of physical environments at the human scale and socially sustaining design strategies addressing diverse human needs. Field trips may be required. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: Graduate standing or consent of instructor.

ARCH 573 Design: Technology and Performance credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/573/)
Design studio investigations of buildings and systems focusing on structure, enclosure, technology and performance. Integration of building materials, components and systems and their impact on the design, construction, and sustainability of buildings. Field trips may be required. May be repeated in separate terms to a maximum of 12 credit hours. Prerequisite: Graduate standing or consent of instructor.

ARCH 574 Design: Architecture and Urban Design credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/574/)
Design studio investigations of issues that impact urban habitats, buildings and people. Architecture and urban design, preservation, and adaptation of new and existing buildings, cities, districts, public realms and urban environments. Designing and preserving buildings and communities in a sustainable manner. Field trips may be required. May be repeated in separate terms to a maximum of 12 credit hours. Prerequisite: Concurrent enrollment in ARCH 536 or consent of instructor.

ARCH 575 Integrative Architecture Design Studio credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/575/)
Schematic design and development of a public building focusing on the integration of environmental, structural, and building envelope systems, while also addressing issues of accessibility, life safety, environmental stewardship, and site conditions. Field trips may be required. Prerequisite: ARCH 536 and ARCH 537.

ARCH 576 Architectural Design Seminar credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/576/)
Presentations and discussions relative to various areas of architectural and environmental design concerns. May be repeated to a maximum of 15 hours. Prerequisite: Consent of instructor.

ARCH 577 Theories of Architecture credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/577/)
Review of principles of architectural design; factors in programming architectural requirements; design development; and evaluation and criticism. Prerequisite: ARCH 517 or consent of instructor.

ARCH 588 Independent Study credit: 0 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/588/)
Independent guided study and investigation in a selected area of architecture. Approved for Letter and S/U grading. May be repeated in the same or separate semesters to a maximum of 12 hours, if topics vary. Prerequisite: Graduate standing in Architecture, written proposal approved by a sponsoring faculty member and the approval of the Director of Graduate Studies.

ARCH 589 PhD Colloquium credit: 1 Hour. (https://courses.illinois.edu/schedule/terms/ARCH/589/)
Provides Ph.D. students insight on the opportunities, responsibilities and expectations of various career paths, including academia, industry, and government. Core responsibilities - research, teaching and service - required of academic faculty will be discussed, along with important resources and strategies to aid students in obtaining a position and plotting a successful career path. Approved for S/U grading only. May be repeated in separate terms to a maximum of 2 hours. Ph.D. students must repeat in separate terms to a maximum of 2 hours.

ARCH 590 Directed Research credit: 0 to 8 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/590/)
Nature and scope of projects to be determined through consultation between student and faculty advisor; open to architecture and landscape architecture majors as well as those from other disciplines who wish to engage in interdisciplinary work. Approved for Letter and S/U grading. May be repeated by students in the same or separate terms to a maximum of 12 hours. PhD students may repeat in the same term to a maximum of 12 hours or in separate terms up to 18 hours. Prerequisite: Consent of instructor.

ARCH 591 Special Problems in Architectural History and Theory credit: 3 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/591/)
Examines historical and/or theoretical problems in the history of architecture, the built environment, and related designed objects and arts in relation to emerging, interdisciplinary research. Topics can include thematic investigations of historical, conceptual, aesthetic, and theoretical problems; the work of particular architects and/or patrons; specific buildings or environments in a single or multiple geographic regions or periods. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: Consent of instructor. Graduate Standing.

ARCH 592 Special Problems in Urbanism credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/592/)
Addresses emerging issues and research focused on cities, regions and urbanism, with particular focus on issues pertinent to architecture. Topics may include urban theories, morphological studies, social, political and economic influences in cities, sustainable urbanism, comparative analysis or cities, and urbanism in global contexts. May be repeated to a maximum of 12 hours. Syllabi for this course vary by instructor and semester. Prerequisite: Graduate Standing.

ARCH 593 Special Problems in Detail and Fabrication credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/593/)
The investigation and study of the design and fabrication of architectural components and assemblies. May be repeated as topics vary to a maximum of 12 hours. Prerequisite: Restricted to Graduate Students.

ARCH 594 Special Problems in Building Performance credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/594/)
In-depth investigation of emerging issues and specific areas of research interest beyond what is covered in graduate courses of regular offering in the area of building performance. Students, as individuals or in groups, are expected to propose a research plan and methods for a specific topic of research interest in consultation with the instructor, and execute it under the guidance of the instructor through consultation on a regular basis. May be repeated to a maximum of 12 hours. Prerequisite: Restricted to Graduate Students.

ARCH 595 Spec Prob Struct Theory & Des credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/595/)
Individual or group investigation and study in architectural engineering application; research in economy and design in correlation with architectural, mechanical, and structural requirements. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARCH 596 Special Problems in Health and Wellbeing credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/596/)
In-depth investigation of emerging issues and specific areas of research interest by individuals or groups. Topics are those beyond what is covered in graduate courses regularly offered in the area of health and wellbeing, including theories and knowledge of specific buildings or projects in diverse global contexts; comparative studies; and theoretical, conceptual, and health-focused problems. May be repeated to a maximum of 12 hours. Prerequisite: Restricted to Graduate Students.

ARCH 597 Special Problems in Architectural Design credit: 2 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/597/)
Individual investigation of building types and systems, aesthetic theories, programming and other problems in architectural design. May be repeated to a maximum of 12 hours. Prerequisite: Restricted to Graduate Students.

ARCH 598 Specialized Architectural Practice credit: 0 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/598/)
Academic dimension to professionally supervised field experiences in which problems in architectural design and technology are defined, researched, and solved. Advanced doctoral students are introduced to applied research processes in any of architecture's sub-disciplines. Sites of applied research may include commercial firms, not-for-profit organizations, and government agencies. Students work in school-approved firms or agencies of their choice. Written accounts of work, documentation of research questions, and reflective experiential learning reports must be submitted. This course is intended to facilitate CPT in professionally focused environmental design research for students in the PhD program. Approved for S/U grading only. May be repeated for up to 11 months total of training. Prerequisite: Required research methods course (LA 505 or ARCH 563/LA 563 or equivalent) and approval of both PhD program chair and student's PhD adviser. Restricted to PhD students who have completed stage 1 of coursework.

ARCH 599 Thesis Research credit: 0 to 16 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/599/)
For doctoral students in Architecture who have completed their required coursework and are working on their dissertations or who are completing their dissertation proposals prior to their preliminary examinations. Consists of focused writing of the dissertation or proposal as directed by Dissertation Advisor. Arranged sessions provide time devoted to meeting writing goals; discussion of the writing process; advisor feedback on students' writing, and guidance on how to make progress on the writing. Reserved for use by Ph.D. students in the writing phase of their dissertation work or in the semester leading to their preliminary examinations. In extraordinary cases it may be approved for use by M.S. students submitting a written thesis. Approved for S/U grading only. May be repeated in separate terms to a maximum of 32 hours. Prerequisite: Consent of instructor and graduate program coordinator. Restricted to Ph.D. Students.