ARCHITECTURE (ARCH)

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

Courses

ARCH 101 Introduction to Architecture credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/101/)
An introduction to architecture, architectural education and the profession with emphasis on issues that influence architecture and the people and processes involved.

ARCH 164 Architecture as a Second Language credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/164/)
The conceptual toolbox used by architects, and the tools in it, are unique and used by architects in both expected and unexpected situations. These tools can be thought of as a second language. Architecture as a Second Language is a hands-on, experiential online course that immerses students in challenging activities similar to those architects face. The course helps develop new perspectives, capabilities, and insights that can be applied to any calling or discipline.

This course satisfies the General Education Criteria for: Humanities - Lit Arts

ARCH 171 Concepts and Theories of Architectural Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/171/)
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.

ARCH 172 Drawing and Modeling credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/172/)
Introduction to the architectural graphic communication skills that architects use to visualize, analyze, and record creative thoughts: freehand sketching, architectural delineation, and digital applications.

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

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 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 273 Strategies of Architectural Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/273/)
Focuses on understanding architecture as holistic synthesis of principles, technology and form. Content is arranged in six areas: Research and Analysis, Typology Analysis, Street Analysis, Block Analysis, Neighborhood Analysis, and Development and Presentation. Students work both on individual assignments and in teams on design projects. Emphasis on combining graphic and modeling skills with analytical skills. Exercises require demonstration of skills and concepts introduced in earlier design and technology courses.

ARCH 274 Representation credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/274/)
Develops understanding of the representation of ideas, values, and meaning in the built environment. Focuses on three topic areas: analysis, technical communication, and modeling. Exposure to multiple software tools and mastery of basic skills in each.

ARCH 300 Ind Studies in Urban Design credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/300/)
The individual study of selected topics involving the history, design, and function of significant European cities. Prerequisite: One year of history of architecture or Art History; consent of instructor.

ARCH 314 History of World Landscapes credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/314/)
Same as LA 314. See LA 314.

This course satisfies the General Education Criteria for: Advanced Composition Humanities - Hist Phil Cultural Studies - Western
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 341 Environment Tech HVAC  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/341/) Study of the control of thermal environment, mechanical and related building sub-systems, and their integration into the overall building design. The specific topics include: thermal comfort and behavioral implications; fundamentals of thermal behavior of buildings; the principles of heat and moisture in buildings; indoor air quality and "Sick Building Syndrome"; energy and sustainability implications of building design; and mechanical systems including HVAC and plumbing systems. Prerequisite: ARCH 233.

ARCH 342 Environment Tech Ltg & Acoust  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/342/) Study of the control of luminous and sonic environments, the supporting building systems, and their integration into the overall building design. Specific topics include: lighting fundamentals; light sources; effects of lighting on comfort and performance; lighting calculations and design; energy economy and sustainability; acoustic fundamentals; room acoustics; noise control; and basic electrical and sound systems. Prerequisite: ARCH 233.

ARCH 351 Statics & Dynamics  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/351/) Study of equilibrium of rigid bodies in two and three dimensions; trusses; shear and bending moments in beams; arches and frames; cables; friction; introduction to dynamics; architectural applications. Prerequisite: MATH 220 or MATH 221; and MATH 231 or PHYS 101.

ARCH 352 Mech of Mat & Design Appl  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/352/) Study of stresses, strains, and deformations in axially loaded members; direct shear and bearing stresses; torsion; beam stresses and deflections; stresses under combined loading; column buckling; design of structural members; introduction to statically indeterminate structures; architectural applications. Prerequisite: ARCH 351.

ARCH 371 Architectural Design and Urbanism  credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/371/) Building design in urban settings; including introductory urban design and site planning issues; urban zoning requirements; human-built environment relationships; life safety requirements; universal design and accessibility; architectural design methods and presentation techniques; required field trips. Prerequisite: ARCH 171, ARCH 172, ARCH 273, ARCH 274, or Consent of Instructor.

ARCH 372 Designing for Human Well-being  credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/372/) This course focuses on person-environment relationships to improve the well-being outcomes of design. Students explore nested environmental scales, human and built context, natural environment systems, cultural perspectives, multi-sensory perception, and widely accessible, enabling and inclusive environments. This course introduces design projects as discrete places, both within and influenced by broader physical, social, cultural, and economic systems. This class requires field trips. Prerequisite: ARCH 171, 172, 273, 274, 321, 371 or consent of Instructor. Course restricted to BSAS majors with junior standing or above.

ARCH 399 Study in Versailles, France  credit: 0 to 18 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/399/) Study in the University of Illinois Architectural Program at Versailles, France. Approved for S/U grading only. Prerequisite: Concurrent registration in the Versailles, France Study Abroad Program.

ARCH 400 Senior Honors in Architecture  credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/400/) For candidates for honors in Architecture. Independent guided study and research in a selected area of architecture. 1 to 4 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 hours with consent of Director of School. Prerequisite: Senior standing in architecture, a University grade-point average of 3.0 or, in special cases, consent of Director of School.

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/) While primarily associated in popular imagination with its ancient, medieval, and Renaissance past, Rome is a vital, changing, and challenging contemporary city. Rome's many layers show the intersection of multiple periods of architecture and the effects of politics, economics, religion, and culture on the urban context. This course considers the city of Rome from its foundation until today, using critical strategies for understanding urban environments as well as individual monuments. We will employ a variety of evidentiary materials: individual monuments, maps, photographs, prints, primary texts, and films. 3 undergraduate hours. 3 graduate hours. Prerequisite: Sophomore standing.
Information listed in this catalog is current as of 10/2020
ARCH 433  Design of Steel and Reinforced Concrete Structures  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, shear, and combined forces as well as bolted and welded joints. Reinforced concrete as a structural material; transformed sections; design for bending, shear, and serviceability; design of one-way slabs and columns. 4 undergraduate hours. 4 graduate hours. Credit is not given for both ARCH 433 and ARCH 451; credit is not given for both ARCH 433 and ARCH 452. Prerequisite: ARCH 232.

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 441  Heat and Moisture in Buildings  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/441/)
Provides information and skills necessary for the designer to deliver dry, durable and healthful buildings. First half covers theory, including heat transfer, psychrometrics, steady-state diffusion and conduction analysis, and transient analysis. Second half covers building applications: roofs, walls, windows, foundations, and mechanical systems. 3 undergraduate hours. 3 graduate hours. Prerequisite: ARCH 341 or equivalent.

ARCH 451  Theory & Design Steel & Timber  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/451/)
Analysis and design of steel and timber structures for buildings. Steel columns, beams, trusses, connections, roof and floor framing systems; timber beams, columns, roof and floor framing systems. 4 undergraduate hours. 4 graduate hours. Prerequisite: ARCH 352.

ARCH 452  Theory of Reinforced Concrete  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/452/)
Concrete materials; behavior of reinforced concrete construction; behavior and design of structural elements, one-way slabs, beams, and girders; columns; ACI code requirements; and introduction to continuity in reinforced concrete structures. Course information: 4 undergraduate hours. 4 graduate hours. Prerequisite: ARCH 352.

ARCH 460  International Architecture  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/460/)
Interdisciplinary opportunity to focus on, study, and record the design and planning of cities and rural settlements in other cultures. Through directed study and participation in the intellectual environment of a foreign university, students analyze unfamiliar settings, developing insights to enrich their professional development. 4 undergraduate hours. 4 graduate hours. May be repeated in separate terms to a maximum of 8 hours. Prerequisite: Junior standing or higher in the School of Architecture, Department of Landscape Architecture, or the Department of Urban and Regional Planning.

ARCH 461  Critical Travel Documentation  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/461/)
Modern and historic city forms and rural practices are analyzed while experiencing the realities of daily life traveling in another culture. Journals include drawings and writings that record buildings, environs, and landscapes. 4 undergraduate hours. 4 graduate hours. May be repeated in separate terms to a maximum of 8 hours. Prerequisite: Junior standing or higher in the School of Architecture, the Department of Landscape Architecture, or the Department of Urban and Regional Planning.

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. May be repeated in separate terms to a maximum of 8 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 and concurrent enrollment in ARCH 233.

ARCH 473  Architectural Design and Performance  credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/473/)
Schematic design and development of a small-scale public building emphasizing the integration of the basic elements of building: materials, details, structure, technology, program, life safety, and universal design. 6 undergraduate hours. 6 graduate hours. Prerequisite: ARCH 371 and ARCH 372.

ARCH 474  Architectural Design and Making  credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/474/)
Building design that emphasizes the creative process of making, experimentation, and theories of contemporary methods and materials. Projects focus on translating design ideas at multiple scales into reality through computation, representation, or production, utilizing fabrication processes. Outcomes foreground entrepreneurial design thinking and team-based learning. 6 undergraduate hours. 6 graduate hours. Prerequisite: ARCH 473.
ARCH 475  Arch Design & Development  credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/475/)
Schematic design and development of a small-scale public building emphasizing the integration of the basic elements of building; materials, details, structure, technology, program, life safety, and universal design. 6 undergraduate hours. 6 graduate hours. Prerequisite: ARCH 374 or ARCH 472.

ARCH 476  Arch Design & Exploration  credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/476/)
Exploration of boundaries of architecture and the built environment. Focused exploration into specific design topics, such as issue-oriented building problems, urban design theory, intermediate building design and site planning theory, human-environment relationship theory, interdisciplinary design, and architectural design and presentation methods. 4 undergraduate hours. 4 graduate hours. Prerequisite: ARCH 475.

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 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 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: 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 502  Structural Planning  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/502/)
General problems in the selection and design of structural systems for buildings; methods of analysis; site explorations, soils, and foundations; bracing; and special systems. Prerequisite: ARCH 451 and ARCH 452.

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. 3 graduate hours. No professional credit. Prerequisite: ARCH 410, ARCH 411, or equivalent as determined by the instructor.
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. 3 graduate hours. No professional credit. May be repeated to a maximum of 12 hours in separate terms. Prerequisite: ARCH 411, 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. Prerequisite: ARCH 413 and ARCH 414, or equivalent as determined by the instructor.

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. 3 graduate hours. No professional credit. 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/)
This course is a 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. 3 graduate hours. No professional credit.

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 Advanced Applications in the Built Environment, Architecture and Global Health and Well-Being  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/521/)
This course 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. 4 graduate hours. No professional credit. Prerequisite: Restricted to graduate students.

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. 4 graduate hours. No professional credit. Prerequisite: ARCH 321, ARCH 521, or consent of instructor. Restricted to graduate students.

ARCH 530 Management in Architecture  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/530/)
Study of management and business administration topics relevant to the architecture profession. The application of: marketing, ethics, accounting, organizational behavior, quantitative analysis, finance, operations, economics, and strategic planning to the field of architecture. Management and economic issues that influence and motivate commercial, industrial, institutional, and individual clients are addressed. Prerequisite: Graduate standing in Architecture.

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 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. 4 graduate hours. No professional credit. 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. 4 graduate hours. No professional credit. Prerequisite: ARCH 434 or consent of instructor.
ARCH 538 Econ Issues in Arch Develop  credit: 4 or 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/538/)
Individual and team analysis of architectural development proposals addressing relevant economic topics and trends. Proposals are analyzed for development, construction, finance, operation, and sale costs. Potential and projected rate of return on investment is established for specific time periods. Economic and social forces impacting upon real estate values are examined. 4 or 6 graduate hours. No professional credit. Prerequisite: ARCH 501, ARCH 530, and ARCH 534; or consent of instructor.

ARCH 544 Bldg Sys & Design Integration  credit: 0 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/544/)
Advanced course on building design for greater performance, including the study of: the anatomical and functional variations of building subsystems and their design implications; inter-system relationships and synergistic integration of building subsystems into the overall building; and the strategies for designing buildings of high functional performance and greater overall value. Term paper is required for 4 hours credit. Prerequisite: Graduate standing in Architecture or consent of instructor.

ARCH 545 Design & Constructability  credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/545/)
Advanced course on building design for greater constructability, including material alternatives and their architectural, performance, and construction implications; the implications of the specifics of design on the range of applicable construction methods, and therefore, on construction productivity and economy; and the strategies for designing buildings of high constructability and greater overall value. Term paper is required for 4 hours credit. Prerequisite: ARCH 544 or consent of instructor.

ARCH 546 Programming & Concept Studio  credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/546/)
An advanced course on programming architectural projects and developing design concepts to best meet the project goals and maximize value creation. Investigation of relevant issues and appropriate methods of programming and concept development are followed by programming and design exercises. The specific contents include: theories and methods of programming; general program requirements and exemplary design responses for selected major building types; testing of the viability of selected model programs through exploration of appropriate design responses; further enhancement of the subject programs in light of such explorations; and investigation and development of philosophically sound and operationally efficient methods of programming and design. May not be repeated for credit. Prerequisite: Graduate standing in architecture and consent of instructor.

ARCH 547 Architectural Practice Studio  credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/547/)
Comprehensive building design with emphasis on holistic design integration for optimum performance and constructability with best possible economy under the realistic temporal, technical, legal, and budgetary limitations. The projects, typically real ones, are executed through partial construction document phase through collaborative design by project teams. (Day-long Friday field trips). Prerequisite: ARCH 534, ARCH 545, and ARCH 546; or consent of instructor.

ARCH 548 Const Execution & Admin  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/548/)
Advanced course in construction with emphasis on acquiring knowledge and developing skills for successful project execution in a real-time project with numerous variables affecting the project outcome, including: devising methods and strategies for effective project execution; making decisions that can steer the project to the best possible direction; and skillfully mediating disputes and conflicts that might arise. For this purpose, on-going major construction projects are used as Learning Laboratories. May be repeated to a maximum of 8 hours. (Summer I credit: 1 graduate hour and Summer II credit: 2 graduate hours). Prerequisite: ARCH 501 and ARCH 545; or consent of instructor.

ARCH 550 Reinforced Concrete Design  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/550/)
Selection, design, and comparison of reinforced concrete floor systems for buildings; study and design of columns and footings; and prestressed concrete. Prerequisite: ARCH 452.

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 451 and ARCH 452.

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 452 and ARCH 551.

ARCH 553 Adv Reinforced Concrete Design  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/553/)
Critical review of the analysis, methods, and specifications involved in the design and behavior of reinforced concrete structures for buildings, including tall buildings, plates, and shells; computer applications. Prerequisite: ARCH 551; credit or concurrent registration in ARCH 560 or consent of instructor.

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.

Information listed in this catalog is current as of 10/2020
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. 3 graduate hours. No professional credit. 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 451 or equivalent.

ARCH 559 Structural Masonry Design  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/559/)
Engineering properties of masonry materials; codes and standards for masonry structures; analysis and design of masonry structures including multistory buildings and arches. Prerequisite: ARCH 452 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 Soc/Beh Research Designed Env  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ARCH/563/)
Introduction to methods and techniques of systematically generating social and behavioral information relevant to the programming, design, and evaluation of physical environments. Same as LA 563. Prerequisite: Graduate standing in architecture, landscape architecture, or urban and regional planning.

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. 6 graduate hours. No professional credit. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: Graduate standing or consent of instructor.

ARCH 572 Design: Behavior and Environment  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. 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. 6 graduate hours. No professional credit. 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. 6 graduate hours. No professional credit. 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. 6 graduate hours. No professional credit. 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. 6 graduate hours. No professional credit. 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. 4 graduate hours. No professional credit. 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. 0 to 4 graduate hours. No professional credit. 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. 1 graduate hour. No professional credit. 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. 0 to 8 graduate hours. No professional credit. Approved for Letter and S/U grading. May be repeated by MArch 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. 3 to 4 graduate hours. No professional credit. 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 12 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. 2 to 4 graduate hours. No professional credit. 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. 2 to 4 graduate hours. No professional credit. 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. 2 to 4 graduate hours. No professional credit. 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. 2 to 4 graduate hours. No professional credit. 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. 2 to 4 graduate hours. No professional credit. 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/)
This course adds an 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 accomplished, documentation of research questions developed and pursued, and reflective experiential learning reports must be submitted for evaluation. Field experiences may be part time or full time. 0 graduate hours. No professional credit. Approved for S/U grading only. May be repeated for up to 11 months total of training. This course is intended to facilitate CPT in professionally focused environmental design research for students in the PhD program. Prerequisite: Required research methods course (ARCH 505/LA 505 or ARCH 563/LA 563 or equivalent) and approval of both PhD program chair and student's PhD adviser. For 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. 0 to 16 graduate hours. No professional credit. 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.