ARCHITECTURE (ARCH)

ARCH 500
Global Modernism
During the last one hundred years a number of cultural, economic, and social changes have moved architectural discourse and practice into a global network. This survey course focuses on the rise of new educational, financial, geo-political, professional, and technological scenarios that transformed architecture and urbanism from the end of World War One to the present. Canonical buildings and sites are discussed within the context of global modernism.
Lecture: 3 Lab: 0 Credits: 3

ARCH 501
Contemporary Architecture
This course investigates the state of contemporary architecture as represented by significant practices, buildings, theories, and criticisms. Themes to be considered include globalization, the role of digital design media, the ethics and aesthetics of sustainability, contemporary urbanism, new approaches to materials and structure, and recent interests in ornament and pattern-making. Current conditions will be related historically to postwar reactions to modernism and contextually to the social and technological shifts of recent decades. With a focus on primary readings and building documentation, the course places an emphasis on the great complexity of social, political, intellectual, and technological forces affecting design. Critical reading and writing skills will be emphasized.
Lecture: 3 Lab: 0 Credits: 3

ARCH 502
Advanced Topics in History and Theory I
Intended to build on the knowledge and abilities gained in the foundational architectural history and theory courses. This seminar focuses on advanced topics in history, theory, and criticism. Students select from varying and diverse topics such as urbanism, sustainability, design methodology, aesthetics, ethics and law, history of technology, and architecture in relation to other arts. Seminar may also offer intense focus on particular architects, periods, regions, or movements. Critical reading and writing skills will be emphasized. In addition, the advanced seminar will teach research skills, will expect the students to formulate and pursue original research topics, and will expect oral presentations of these projects. These abilities will be evaluated through in-class presentations and research papers.
Lecture: 3 Lab: 0 Credits: 3

ARCH 503
Advanced Topics in History and Theory II
Intended to build on the knowledge and abilities gained in the foundational architectural history and theory courses. This seminar focuses on advanced topics in history, theory, and criticism. Students select from varying and diverse topics such as urbanism, sustainability, design methodology, aesthetics, ethics and law, history of technology, and architecture in relation to other arts. Seminar may also offer intense focus on particular architects, periods, regions, or movements. Critical reading and writing skills will be emphasized. In addition, the advanced seminar will teach research skills, will expect the students to formulate and pursue original research topics, and will expect oral presentations of these projects. These abilities will be evaluated through in-class presentations and research papers.
Lecture: 3 Lab: 0 Credits: 3

ARCH 505
Urban Ecology
Students will develop a sensitivity to the environment in which architecture is created. Emphasis will be placed on an in-depth exposure to the integration of natural features of site, sustainable components of both natural and man-made systems, and the synergy of ecological design.
Lecture: 3 Lab: 0 Credits: 3

ARCH 506
Design Communications I: Units and Order
A comparative study of physical and digital media from the immediacy of the hand to the logical rigor of algorithmic design. Organizational systems and mapping strategies explored as craft is developed across a broad toolkit. Instruction in object-oriented thinking begins an introduction to computer science.
Lecture: 1 Lab: 2 Credits: 3

ARCH 507
Design Communications II: Systems and Assemblages
The full design communication process, from contextual and programmatic analysis to the digital fabrication of a system of parts, will be introduced through a series of related studies. Computationally associative design methodologies will be utilized and continue the computer science introduction.
Prerequisite(s): ARCH 506 with min. grade of C
Lecture: 1 Lab: 2 Credits: 3

ARCH 508
Design Communications III
Introduction to geospatial mapping, data modeling, and data visualization processes for research, analytics, and generative design. Basic data structures, algorithms, and design patterns advance students ability to construct digital tools and communicate complexity.
Prerequisite(s): ARCH 506 with min. grade of C
Lecture: 1 Lab: 2 Credits: 3
ARCH 509  
Topics in Advanced Technology  
This research seminar examines advances in the technologies that affect the practice of architecture. The course examines leading technologies, processes, and applications, and their role in building design and production. The course will navigate the broad and varied materials related to advanced technologies in architecture by focusing on specific applications for specific projects. Students may select between varying and diverse topics offered by the faculty that may include building envelopes, architectural materials, building and environmental systems, advanced structural design, energy and sustainability, architectural acoustics and lighting, fabrication, and computer-aided design technologies.  
Lecture: 3 Lab: 0 Credits: 3

ARCH 513  
Environment and Building Systems I  
Selection and design of building support systems: heating, ventilating, air conditioning, water supply, sanitary and storm drainage, power distribution, lighting, communications, and vertical transportation. Systems are analyzed for their effect on building form, construction cost, and operating efficiency.  
Lecture: 3 Lab: 0 Credits: 3

ARCH 514  
Environment and Building Systems II  
Selection and design of building support systems: heating, ventilating, air conditioning, water supply, sanitary and storm drainage, power distribution, lighting, communications, and vertical transportation. Systems are analyzed for their effect on building form, construction cost, and operating efficiency.  
Prerequisite(s): ARCH 513 with min. grade of C  
Lecture: 3 Lab: 0 Credits: 3

ARCH 520  
Introduction to Urbanism  
An immersion in the history, discourse, and culture of cities in the modern era with an emphasis on Chicago and a focus on the needs and influences surrounding urban growth, development, and culture. Readings, lectures, case studies, film screenings, field trips, and discussions will provide a basic set of conceptual and theoretical resources for understanding the origins and development of cities. This course will develop a context for understanding the role of design in shaping the urban environment.  
Lecture: 3 Lab: 0 Credits: 3

ARCH 523  
Master's Project Preparation: Research Analysis and Programming  
Identification and development of the proposal for the master's project. Development of the project will include a comprehensive listing of all necessary program elements, research, analysis and selection of site, a statement of design parameters, project objectives, or similar project characteristics. Projects will be selected from eight areas of focus: sustainable cities, building delivery practices, community-based planning, research/history/ theory, research/advanced technologies, housing and urban design, high-rise typology, and cultural institutions.  
Lecture: 3 Lab: 1 Credits: 3

ARCH 521  
Environment and Building Systems II  
Selection and design of building support systems: heating, ventilating, air conditioning, water supply, sanitary and storm drainage, power distribution, lighting, communications, and vertical transportation. Systems are analyzed for their effect on building form, construction cost, and operating efficiency.  
Prerequisite(s): ARCH 513 with min. grade of C  
Lecture: 0 Lab: 12 Credits: 6

ARCH 542  
Architecture Studio II: House  
The second semester of the Master of Architecture focuses on the development of the fundamental aspects of building (space, structure, and materials) which are explored through designing a small house. Students expand their notions of scale and context through the investigation of current issues, historical and contemporary precedents, and the careful analysis and documentation of a specific site within a neighborhood of the city. Through a series of assignments, the studio is guided step by step through an iterative design process that culminates in imagining the home of the future.  
Prerequisite(s): ARCH 541 with min. grade of C  
Lecture: 0 Lab: 12 Credits: 6

ARCH 543  
Architecture Studio III: Neighborhood  
Students move beyond the single building and elements that make up the home to consider the spaces between buildings, infrastructural elements, and neighborhoods. More complex sites and programs are introduced through the study of mixed-use buildings with hybrid structures and projects comprised of multiple building elements. Research of neighborhood typologies culminate in an urban design study that becomes the basis for individual building designs. The introduction of sustainable design concepts and material selection increase the students understanding of the building as a whole and are precursor to the comprehensive building design studio. Finally, students explore the architect’s role in the making of a neighborhood and end with a project considering the neighborhood of the future.  
Prerequisite(s): ARCH 542 with min. grade of C  
Lecture: 0 Lab: 12 Credits: 6
ARCH 544
Architecture Studio IV: Institution
This studio is the last of the four milestones of the curriculum consisting sequentially of Element, House, Neighborhood, and Institution. As a bridge between the concerns of the neighborhood and the metropolitan scale issues to be encountered in the subsequent Cloud Studios, this studio will deal with problems, programs, and contexts that are unique to institutional architecture within the city and will challenge students to create forward-looking strategies for renewed civic and cultural development. Because this studio is the only required comprehensive studio for the Master of Architecture degree program, all students must demonstrate that they are capable of producing a single building project demonstrating the synthesis of ecological planning, programming and code analysis, structure, and building systems. Students will research and produce a building program based on the themes introduced in the studio sections consisting of all necessary code research, context documentation and analysis, building theme research, and logistics research. Project will vary by studio section.
Prerequisite(s): ARCH 543 with min. grade of C
Lecture: 0 Lab: 12 Credits: 6

ARCH 545
Architecture Cloud Studio V: Metropolis
The cloud studio is a research-based design studio focused on investigating the complex forces that shape the built environment and proposing new strategies for urban development. The aim of the studio is to build a commentary and transformative agenda toward the future metropolis and to drive urban and architectural design solutions with the most advanced technologies and critical thought. The studio production is oriented toward the development of new strategies and future urban models with the aim of advancing the knowledge of relationships between urban thinking and materiality, technology, energy, ecology, emerging media, and socio-political and cultural concerns. Strong emphasis is put toward engagement with external parties and agencies to connect the academic environment with the professional practice and to promote cross-disciplinary collaboration. Students will be able to select from a variety of studio topics. Vertical studio integrating advanced BArch, MArch, MLA, MS, and PHD students. Open only to Architecture majors.
Prerequisite(s): ARCH 544 with min. grade of C
Lecture: 0 Lab: 12 Credits: 6

ARCH 546
Architecture Cloud Studio VI: Metropolis
The design-based research studio is a continuation of the ARCH 545 research based design studio. It is focused on the development of the specific proposals based on the critical findings of ARCH 545. The aim of the studio is to develop formal solutions which address the complexities of modern metropolis and advance disciplinary knowledge at large. The studio production is oriented toward the development of projects in a variety of scales from large-scale master plans, urban designs, and landscape designs to new urban typologies and singular buildings, all of which can address a variety of the issues pertinent to the modern metropolis. The studios are formed in few thematic clusters which complement each other or serve as dialectical opposites. Each studio explores variety of techniques from parametric design, digital fabrication, model making, and advanced geospatial software to cultural and theoretical discourses. Vertical studio integrating advanced BArch, MArch, MLA, MS, and PHD students. Students will be able to select from varied studio topics. Open only to Architecture majors.
Prerequisite(s): ARCH 545 with min. grade of C
Lecture: 0 Lab: 12 Credits: 6

ARCH 551
Design of Energy-Efficient Buildings I
Design criteria for achieving human performance goals in energy-efficient buildings, criteria for the exterior/interior environment, and criteria for architectural, mechanical, electrical and building system components. Building upon the fall course, various energy-conserving strategies shall be evaluated for achieving cost effective, energy-efficient design of a specific building type.
Lecture: 3 Lab: 0 Credits: 3

ARCH 552
Design of Energy-Efficient Buildings II
Design criteria for achieving human performance goals in energy-efficient buildings, criteria for the exterior/interior environment, and criteria for architectural, mechanical, electrical and building system components. Building upon the fall course, various energy-conserving strategies shall be evaluated for achieving cost effective, energy-efficient design of a specific building type.
Lecture: 3 Lab: 0 Credits: 3

ARCH 553
High-Rise Building Technology I
The course consists of presentations by specialists in the various technologies of high rise buildings including planning, financing, code reinforcement, materials, architecture, engineering, project management, construction, building management services, safety, and maintenance.
Lecture: 3 Lab: 0 Credits: 3

ARCH 554
High-Rise Building Technology II
The course consists of presentations by specialists in the various technologies of high rise buildings including planning, financing, code reinforcement, materials, architecture, engineering, project management, construction, building management services, safety, and maintenance.
Lecture: 3 Lab: 0 Credits: 3
ARCH 560
Integrated Building Delivery Practice/BIM
Architecture has always been a complex interdisciplinary business, where the management of allied professions and industry affiliates is critical to the success of any endeavor of significant scale. The introduction of BIM (Building Information Modeling) is an advance in project delivery tools which should be viewed as a multi-dimensional expansion of the mechanisms of management and accommodation of an ever-broadening range of participants in the organization of a project, allowing the development of a new delivery protocol, IBPD (Integrated Building Project Delivery). BIM is currently recognized as consolidating the basis for a range of functions including drawing, modeling, document management, clash detection, interdisciplinary coordination, estimating, scheduling, constructability review, production modularization, fabrication protocols, and for the analysis of myriad physical and prescriptive demands such as energy consumption, daylighting, code compliance, egress, circulation, and operation scenarios. The breadth of information embedded in a BIM model will require the emergence of facilitating professionals to an extent previously unknown in the practice and the industry. This course explores the state of the profession and the anticipated ramifications.

Lecture: 3 Lab: 0 Credits: 3

ARCH 561
Entrepreneurship and Innovation in Architecture
The course teaches future architects the practical aspects of entrepreneurial small business management, to develop a comprehensive opportunity assessment and to develop the skills necessary to improve the odds of success. The course will consider strategies to leverage limited resources for maximum effect. The course will also cover small organization and group behavior, performance, leadership, and motivation in small business settings and will focus on the owner/manager as the principal success factor in the context of a small organization. Emphasis is placed on the circumstances and opportunities of the professional practice of architecture: practice as profession, process, organization, business, and evolving models of practice are covered. The course also provides a series of concepts, frameworks, and heuristics that enable the entrepreneur to anticipate and deal with the challenges that accompany growth of an existing business. Cases, exercises, lectures, and speakers are used to focus on choosing opportunities, allocating resources, motivating employees, and maintaining control while not stifling innovation. A key component of the course is how to sustain entrepreneurial thinking in mid-sized ventures as they continue to grow.

Lecture: 3 Lab: 0 Credits: 3

ARCH 562
Planning Law and Land Policy
Since the introduction of basic zoning laws to the numbers and complexity of ordinances attached to any land parcel have proliferated to include those addressing land use, development, density, environmental concerns both on and off site, aesthetic mandates, energy use, quality of life concerns, and infrastructure development, the growing understanding that comprehensive and integrated systems must be managed across property lines to effect sustainable planning and communities will accelerate the number of prescriptive and policy ordinances enforced at the development of a parcel. Many agencies have further created extra-legal linkages between approvals for land development and the provision of social and ideological benefits to the community. The impact on the profession of architecture of the panoply of planning options and governmental goals is the result that the navigation of the system of mandated design determinates is one of the initial and potentially most creative acts in the process of project delivery. Project designers must understand the ramifications and trade-offs inherent in the system, especially in any attempt to achieve the best use of any parcel of land and position the most appropriate built environment.

Lecture: 3 Lab: 0 Credits: 3

ARCH 563
Introduction to Real Estate Finance Fundamentals
The Art of the Deal, with the emphasis on Art, is a term best positioning the financial structuring behind any project. The ability of the project team leader in integrated practice to understand and appreciate the motivations and opportunities inherent in the initiation of the project will be essential in guiding team decisions and maintaining a leadership position. The understanding of the financial underpinnings of a project is of paramount importance to those intending to actually engage the process of initiating and effecting a construction activity. The sources, costs, and sequence of funding, budgeting, cash flow, incentives options, and tax ramifications regarding a project are to be addressed as component knowledge to an understanding of integrated project management.

Lecture: 3 Lab: 0 Credits: 3
ARCH 564
Comprehensive Opportunity Assessment and Entrepreneurship Development Project/Practicum
Two options are available to the student for the acquisition and assimilation of the breadth of knowledge required to bring project ideas to fruition. The Comprehensive Development Project is a capstone effort which will demonstrate project concept, planning resolution, land acquisition strategies, estimating, scheduling, financial pro-forma, and value capture intents. The practicum would entail employment at a vetted office engaged in the actual process of project assembly. A position requiring a minimum of 20 hours per week, prior review and approval of the work plan, and submittal of documentation of the work undertaken would be required for this scenario. The ultimate objective is to provide a roadmap of the interaction between the architect-entrepreneur, market opportunities, and integrated building delivery practices which facilitate the development of student skills necessary to compete in a rapidly changing socio-economic environment. This course is designed to help students learn and use tools and frameworks to create, implement, and update a strategic plan to shape the future and guide an entrepreneurial organization on its path to success. This course will entail collaboration with real world organizations including city agencies, community development corporations, IIT Department of Community Affairs, or private developers.
Lecture: 6 Lab: 0 Credits: 6

ARCH 565
Construction and Project Management
The organization of deliverables from the multiple participants in a project plan, including estimating, quality control, value engineering, scheduling of work, conflict resolution, pay schedules, and project close-out and commissioning are essential to managing a building project. Many of these areas of endeavor are those most directly impacted by the developments addressed in Integrated Building Delivery Practice. This course will solidify the underpinnings and will amplify, where needed, the requisite understanding in these areas of the practice. The development of managerial skills requisite to the practice of this coordination and the basis of developing inter-professional relationships will be stressed throughout the incorporation of the technical methodologies.
Lecture: 3 Lab: 0 Credits: 3

ARCH 566
Entrepreneurial Design: Sector Studies/Case Studies
This course will be advanced as an independent study format. Each student will work independently to research a project option, or building type, and document the particular attributes of that case study which require specialized address. Case studies might be a particular business niche, such as land sub-divisions, condo conversions, change of use conversions, or build-to-suit options. The studies might pursue particular building types, social initiatives, historic restoration strategies, or even unique construction typologies.
Lecture: 3 Lab: 0 Credits: 3

ARCH 568
Architectural Practice
Lectures and practical problems dealing with specifications, specification writing, administration of construction, contracts, building law, and professional practice.
Lecture: 3 Lab: 0 Credits: 3
ARCH 589
Pre-Thesis Seminar
The Master of Science program seeks to be synthetic and inter-disciplinary in its approach. In contrast to an increasingly compartmentalized design profession divided into disparate realms of expertise, the program endeavors to sharpen critical thinking through collaborative and experimental working processes. Thesis development is parallel and complementary with the design-based research cloud studio ARCH 546 with Master of Science students focusing on the social and cultural aspect of research-based design developments. The seminar will focus on developing a bibliography, case studies of referential projects and built structures, and advanced research methods specifically tailored to the research interests of each student. Regular oral presentations will focus on development of thesis content, the use of media and rhetoric, and the didactic nature of disciplinary architectural communication. Open only to Architecture majors.
Lecture: 0 Lab: 3 Credits: 3

ARCH 590
Specialized Research and Thesis Development
Each thesis project must demonstrate an intellectual objective and an in-depth study that will contribute to the practice of architecture. The formulated problem should combine a theoretical search with the practical considerations of the profession. Research methods are identified that will provide the resources and information necessary for the design process. Post-occupancy building evaluations of similar problems are used to analyze technical assumptions, functional response and social reaction. (Credit: Variable)
Credit: Variable

ARCH 591
Research and Thesis M.S.
The thesis research and development of ARCH 591 is premised on the view that design and research activities are inseparable and that knowledge production (theory) and formal production (practice) are methodologically linked. Marking the transition between the academic and professional worlds, the thesis work is an opportunity for each student to define an individual position with regard to a specific aspect of architectural practice. It is intended that the thesis project looks upon architectural and urban designs as formal and theoretical elaborations of the design-based research cloud studio ARCH 546 as well as the collective outcome of socio-political forces analyzed during thesis research. Thesis work leads towards the final acceptance of the presentation materials by the advisory committee. The text, reductions of the drawings, and representations using various media are bound together in a hard-cover volume, which is deposited in the Graham Resource Center and the Galvin Library. Credits: Variable; minimum total eight semester hours. Open only to Architecture majors.
Credit: Variable

ARCH 593
Master’s Project
The Masters Project is the culmination of both the two-year and three-year Master of Architecture curricula – the synthesis of architectural study into an independent project. The Project is, most commonly, the design of a building or in-depth research about specific aspects of the built environment. Specialized research and design within a wide range of architectural problems include site selection, consideration of architectural context and environmental impacts, development of user function and space programs, and architectural planning and design. Aesthetic and visual aspects and the intellectual foundations of the problem are carefully considered, as well as the technical aspects in the selection and integration of structural and environmental systems. Successful Masters project proposals will be grouped into "Areas of Focus" studios. After final acceptance of the presentation materials by the faculty advisor and the "Area of Focus" teaching faculty, the text, reductions of the drawings, and model photographs are bound together, which are deposited in the GRC and the University’s library.
Prerequisite(s): ARCH 523 with min. grade of C
Lecture: 0 Lab: 12 Credits: 6

ARCH 594
Research Problems
Credit: Variable

ARCH 595
Research in Progress Forum
Research in Progress Forum presents students with opportunities (lectures and reading discussions) to engage with other researchers in the fields of architectural history/theory and technologies of the built environment.
Lecture: 0 Lab: 0 Credits: 0

ARCH 596
ARCH IPRO
Lecture: 0 Lab: 3 Credits: 3
ARCH 597  
Special Problems  
Credit: Variable

ARCH 600  
Continuance of Residence  
Lecture: 0 Lab: 1 Credits: 1

ARCH 601  
Doctoral Methodology Pre-Seminar  
This course provides a foundation for doctoral students in the diversity of research paradigms in architecture. The first component is an introduction to philosophy of knowledge with an emphasis on architecture. The second component entails a critical review and evaluation of diverse research methodologies in current doctoral architectural research. It is intended to provide substantial information on research methodologies not covered in undergraduate and graduate education. In this course students will write a series of papers that critically review the course readings and discussions.  
Lecture: 3 Lab: 0 Credits: 3

ARCH 602  
Crafting a Dissertation  
This course provides a context in which doctoral students can formulate their dissertation proposals. Through reading and discussion of model research projects and methodological studies, students will examine the challenges and potentials of locating a dissertation topic, shaping a hypothesis, selecting methods and interpretive frameworks, conducting research, and articulating a compelling argument. The course addresses both pragmatic and intellectual aspects of research. A primary goal is the writing of a draft dissertation proposal as the basis for the Ph.D. comprehensive exam. The course will follow a seminar format requiring significant reading, writing, and class participation.  
Prerequisite(s): ARCH 601 with min. grade of C  
Lecture: 3 Lab: 0 Credits: 3

ARCH 611  
Seminar in Theory and Technology I  
It will explore the history of modern architectural theory from the late seventeenth-century to 1975 with special regard to technology and its relationship to architectural culture. At times architectural theory forms a backdrop to architectural practice while seemingly taking little account of technological events. At other times technology and its material innovations change the very nature of architectural practice and its discourse. The course will consist of short lecture, presentations, and discussion.  
Lecture: 0 Lab: 3 Credits: 3

ARCH 612  
Seminar in Theory and Technology II  
It will form a continuation of ARCH 611 and consider the interface of theory and technology over the last thirty years. Students will take a more active role in tailoring their participation to advance their research in the dissertation and thesis topics they wish to pursue. Larger thematic issues of theory and technology will be considered within the richness of contemporary debates and competing interests. Students will present papers and a collective seminar document or publication will be produced.  
Lecture: 0 Lab: 3 Credits: 3

ARCH 690  
Research and Analysis Studio  
Each research project must demonstrate an intellectual objective and an in-depth study that will contribute to the practice of architecture. The formulated problem should combine a theoretical search with the practical considerations of the profession. Research methods are identified that will provide the resources and information necessary for the design process. Post-occupancy building evaluations of similar problems are used to analyze technical assumptions, functional response, and social reaction.  
Credit: Variable

ARCH 691  
Doctoral Research  
Credit: Variable

ARCH 801  
Introduction to Architecture: Graduate Architectural Studio Preparatory  
The emphasis of the course is on the fluid integration of manual and digital modes of representation into a cohesive process—a skill set essential for navigating the architectural studio. Concepts and techniques covered will be the foundational skills of the architect; the various modes of freehand drawing, imaging, descriptive and analytic orthographic projection, and architectural model-making.  
Lecture: 0 Lab: 0 Credits: 0