Architecture (ARCH)

Courses

ARCH 196. Field Studies: [Topic]. 1-12 Credits.
A series of practical experiences on or off campus to understand principles or develop skills in performing selected tasks.
Repeatable 99 times

ARCH 198. Workshop: [Topic]. 1-3 Credits.
An intensive experience, limited in scope and time, in which a group of students focus on skills development rather than content mastery.
Repeatable 99 times

ARCH 199. Special Studies: [Topic]. 1-5 Credits.
Experimental course - topic varies.
Repeatable 99 times

ARCH 201. Introduction to Architecture. 4 Credits.
Offers a structure of principles for making places for people. Examines places, design procedures, and the use of archtiectural principles in general.

ARCH 202. Design Skills. 3 Credits.
Introduction to basic design processes, methods, and media.
Requisites: Prereq: ARCH 201 or IARC 204; coreq: ARCH 283.

ARCH 222. Introduction to Architectural Computer Graphics. 4 Credits.
Introduces basic skills and literacy with the computer for architectural illustration, drafting, and design.
Requisites: Prereq: ARCH 202.

ARCH 283. Architectural Design I. 6 Credits.
Design studio projects and exercises introducing fundamental concepts and considerations in environmental design. Teaches knowledge and skills needed in subsequent studios and professional course work. Sequence with ARCH 284.
Requisites: Prereq: ARCH 201 or IARC 204; coreq: ARCH 202.

ARCH 284. Architectural Design II. 6 Credits.
Design studio projects and exercises introducing fundamental concepts and considerations in environmental design. Teaches knowledge and skills needed in subsequent studios and professional course work. Sequence with ARCH 283.
Requisites: Prereq: ARCH 202, ARCH 283; coreq: ARCH 222.

ARCH 383. Architectural Design III. 6 Credits.
Studio projects. Integration of issues of context, activity support, spatial order, construction, structure, and environmental control. Emphasis on schematic concept formation and subsequent architectural development. Sequence with ARCH 384.
Requisites: Prereq: ARCH 284.

ARCH 384. Architectural Design IV. 6 Credits.
Studio projects. Integration of issues of context, activity support, spatial order, construction, structure, and environmental control. Emphasis on schematic concept formation and subsequent architectural development. Sequence with ARCH 383.
Requisites: Prereq: ARCH 222, ARCH 383.

ARCH 399. Special Studies: [Topic]. 1-6 Credits.
Experimental course - topic varies.
Repeatable 99 times

ARCH 401. Research: [Topic]. 1-6 Credits.
Disciplined inquiry of a topic with varying techniques and assignments suited to the nature and conditions of the problem being investigated. Often pursued in relation to a dissertation or thesis.
Repeatable 99 times

ARCH 403. Thesis. 1-9 Credits.
A written document resulting from study or research and submitted as a major requirement for a degree.
Repeatable 99 times

ARCH 404. Internship: [Topic]. 1-12 Credits.
Professional practice in an organization that integrates concepts studied at the university with career-related work experience.
Repeatable 99 times

ARCH 405. Special Problems: [Topic]. 1-12 Credits.
Specialized inquiry into a particular topic by a student and discussed with a faculty member.
Repeatable 99 times

ARCH 406. Practicum: [Topic]. 1-12 Credits.
A series of clinical experiences under academic supervision designed to integrate theory and principles with practice.
Repeatable 99 times

ARCH 407. Seminar: [Topic]. 1-6 Credits.
A small group of students studying a subject with a faculty member. Although practices vary, students may do original research and exchange results through informal lectures, reports, and discussions.
Repeatable 99 times

ARCH 408. Workshop: [Topic]. 1-6 Credits.
An intensive experience, limited in scope and time, in which a group of students focus on skills development rather than content mastery.
Repeatable 99 times

ARCH 409. Terminal Project. 1-12 Credits.
A presentation incorporating the knowledge and skills acquired from course work completed for a degree.
Repeatable 99 times

ARCH 410. Experimental Course: [Topic]. 1-6 Credits.
Experimental course - topic varies.
Repeatable 99 times

ARCH 410L. Experimental Course: [Topic]. 1-6 Credits.
Experimental course - topic varies.
Repeatable 99 times

ARCH 417. Context of the Architectural Profession. 4 Credits.
Introduction to the professional practice of architecture and related careers. Examines the professional, legal, and regulatory environment; firm organization and management; marketing; contractual issues; and the construction process.
Requisites: Prereq: ARCH 484 or IARC 484 or LA 489.

ARCH 423. Media for Design Development: [Topic]. 3 Credits.
Instruction in media for design process. Techniques for problem and context analysis, generating concepts, developing form, and testing proposals. Subject emphasis varies with instructor.
Requisites: Prereq: ARCH 202.
Repeatable 99 times

ARCH 425. Building Information Modeling. 2-3 Credits.
Introduces fundamentals of building informational modeling: conceptual design, design development, and project representation to create 3D models and drawings using BIM software and modeling tools.

ARCH 430. Architectural Contexts: Place and Culture. 4 Credits.
How the design of buildings interacts with physical and cultural contexts of human traditions, landscape, settlements, cities, and suburbs. Historical and contemporary examples.
Requisites: Prereq: ARCH 284 or architectural minor status.

ARCH 431. Community Design. 3 Credits.
Multidisciplinary examination of the history, theory, and practice in the design and development of meaningful and sustainable neighborhoods. Special focus selected by faculty. Open to all majors. Offered alternate years.

ARCH 434. Sustainable Urbanism. 3 Credits.
Seminar investigates contemporary trends and thinking about 'Sustainable Urbanism' and will evaluate these trends in light of their applicability to current design and development projects.

ARCH 435. Principles of Urban Design. 4 Credits.
Introduction to theory and practice of urban design, comparative studies of neighborhood conservation, central city regeneration, growth policies and prospects for restructuring cities, metropolitan regions.

ARCH 437. Theory of Urban Design II. 3 Credits.
Examines the cultural and formal ideas that underlie American and European urban design. 1700 to the present.

ARCH 438. Housing Prototypes. 3 Credits.
An examination of modern housing prototypes (1920s to the present) with an emphasis on understanding the many and varied factors involved in the production of quality housing. Open to all majors.

ARCH 439. Minimal Dwelling. 3 Credits.
Examination of the design of small dwelling units for a variety of users. Offered alternate years.

ARCH 440. Human Context of Design. 4 Credits.
Theoretical principles, case studies, and technical skills for assessing user needs, developing building programs, applying research findings to design, and evaluating performance of the built environment.
Requisites: Prereq: ARCH 284 or architectural minor status.

ARCH 447. Simulation and Visualization. 4 Credits.
Exploration of simulation tools to build skills to evaluate the performance of buildings for daylight, electric light, thermal comfort, and energy use.
Requisites: Prereq: ARCH 492.

ARCH 450. Spatial Composition. 4 Credits.
Architectural space as a means to measure existence and expand awareness. Focus on compositional principles in architecture and methods for analyzing and generating spatial organizations.
Requisites: Prereq: ARCH 284 or architectural minor status.

ARCH 458. Types and Typology. 3 Credits.
Critical introduction to theory of typology that categorizes urban and architectural forms by formal characteristics and cultural meaning. Lectures cover basic concepts, historical development, and case studies.
Requisites: Prereq: ARCH 384, ARCH 450.

ARCH 461. Structural Behavior. 4 Credits.
Develops understanding of behavior of structural elements and systems and their implications on architectural form with reference to historical and contemporary buildings. Sequence with ARCH 462.
Requisites: Prereq: PHYS 201, ARCH 470.

ARCH 462. Structural Design. 4 Credits.
Historical development of materials. Analyzes elements, connections, and systems of wood, steel, and concrete structures from the perspective of construction process, spatial and structural design. Sequence with ARCH 461.
Requisites: Prereq: ARCH 461.

ARCH 470. Building Construction. 4 Credits.
Provide an understanding of the basic materials and methods of architecture with emphasis on the design, construction and performance of primary structure.
Requisites: Prereq: ARCH 284 or architectural minor status.

ARCH 471. Building Enclosure. 4 Credits.
Selection, design, detailing, and performance evaluation of building envelopes: wood, metals, glass, concrete, and masonry veneers and roofing.
Requisites: Prereq: ARCH 462, ARCH 470, ARCH 491.

ARCH 472. Natural Building Systems and Materials: [Topic]. 4 Credits.
Investigations of inorganic and organic natural building materials, benefits, challenges, embodied energy and carbon, latest technological and process innovations, potential use in mainstream construction.
Requisites: Prereq: ARCH 470.

ARCH 473. Advanced Mass Timber Design. 4 Credits.
In-depth examination of mass timber buildings, advanced wood products, timber industry, production, integrated design process involving Architectural Engineering and Design industries, structural systems, and case studies.

ARCH 474. Design the Unseen: [Topic]. 4 Credits.
Advanced topics in the design of the unseen element in the built environment that impact the health of occupants, communities, and the planet.
Repeatable 2 times for a maximum of 12 credits when topic changes

ARCH 476. Residential Construction. 4 Credits.
Provides an understanding of basic materials and methods of North American residential construction with emphasis on design and construction of the wood light frame. Offered alternate years.
Requisites: Prereq: ARCH 484.

ARCH 480. Supervised Design Teaching. 1-3 Credits.
Supervised assistance with desk critiques and tasks related to studio teaching. Written application required.
Requisites: Prereq: ARCH 384.
Repeatable 2 times for a maximum of 3 credits

ARCH 484. Architectural Design. 6 Credits.
Design projects requiring comprehensive and integrative study over a wide range of project options. Individual criticism, group discussions, lectures and seminars by visiting specialists, public review of projects.
Requisites: Prereq: ARCH 384.
Repeatable 99 times

ARCH 485. Advanced Architectural Design I. 8 Credits.
In-depth work on complex design projects and design development beyond that normally possible in intermediate studios. Sequence.
Requisites: Prereq: 24 credits in ARCH 484.

ARCH 486. Advanced Architectural Design II. 8 Credits.
In-depth work on complex design projects and design development beyond that normally possible in intermediate studios.
Requisites: Prereq: ARCH 485.

ARCH 491. Environmental Control Systems I. 4 Credits.
Influence of energy source, climate, heating, cooling, lighting, acoustics, and water and waste systems on design of buildings and sites. Architectural and mechanical means to manipulate thermal environment. Sequence.
Requisites: Prereq: ARCH 284 or architecture minor status.

ARCH 492. Environmental Control Systems II. 4 Credits.
Influence of energy source, climate, heating, cooling, lighting, acoustics, and water and waste systems on design of buildings and sites. Implications of lighting, acoustics, and water and waste for architectural design.
Requisites: Prereq: ARCH 284 or architecture minor status.

ARCH 493M. Passive Cooling. 4 Credits.
Conceptual and quantitative investigations of passive cooling design and performance, including precedents, shading, natural ventilation, evaporative cooling, use of thermal mass, radiant cooling assisted by cold night skies, and control scheduling, supported by field investigations and introductory energy modeling. Multilisted with ENVS 493M.
Requisites: Prereq: ARCH 491.
Equivalent to: ENVS 493M

ARCH 495. Daylighting. 3 Credits.
"Daylighting"—increasing the energy efficiency of a building by maximizing the amount of daylight versus electric light—as an element in architectural design. Models and photography used to study behavior of light. Case studies and prediction techniques.
Requisites: Prereq: ARCH 492.

ARCH 496. Passive House Design and Details. 4 Credits.
In-depth examination climate-specific passive house standard designing principles, building envelope detailing, mechanical systems, net zero design, dynamic modeling, and consultant certification.
Requisites: Prereq: ARCH 470, ARCH 491.

ARCH 498. High Performance Buildings Design: [Topic]. 4 Credits.
Integrated building design and simulation advanced architectural technology course covers the theory and history of high-performance buildings with topical applications of design strategies.
Requisites: Prereq: ARCH 384.
Repeatable 2 times for a maximum of 12 credits when topic changes

ARCH 503. Thesis. 1-9 Credits.
A written document resulting from study or research and submitted as a major requirement for a degree.
Repeatable 99 times

ARCH 507. Seminar: [Topic]. 1-6 Credits.
A small group of students studying a subject with a faculty member. Although practices vary, students may do original research and exchange results through informal lectures, reports, and discussions.
Repeatable 99 times

ARCH 508. Workshop: [Topic]. 1-6 Credits.
An intensive experience, limited in scope and time, in which a group of students focus on skills development rather than content mastery.
Repeatable 99 times

ARCH 510. Experimental Course: [Topic]. 1-6 Credits.
Experimental course - topic varies.
Repeatable 99 times

ARCH 510L. Experimental Course: [Topic]. 1-6 Credits.
Experimental course - topic varies.
Repeatable 99 times

ARCH 517. Context of the Architectural Profession. 4 Credits.
Introduction to the professional practice of architecture and related careers. Examines the professional, legal, and regulatory environment; firm organization and management; marketing; contractual issues; and the construction process.

ARCH 523. Media for Design Development: [Topic]. 3 Credits.
Instruction in media for design process. Techniques for problem and context analysis, generating concepts, developing form, and testing proposals. Subject emphasis varies with instructor.
Requisites: Prereq: ARCH 611.
Repeatable 99 times

ARCH 525. Building Information Modeling. 2-3 Credits.
Introduces fundamentals of building informational modeling: conceptual design, design development, and project representation to create 3D models and drawings using BIM software and modeling tools.

ARCH 530. Architectural Contexts: Place and Culture. 4 Credits.
How the design of buildings interacts with physical and cultural contexts of human traditions, landscape, settlements, cities, and suburbs. Historical and contemporary examples.
Requisites: Prereq: ARCH 680 or ARCH 683.

ARCH 531. Community Design. 3 Credits.
Multidisciplinary examination of the history, theory, and practice in the design and development of meaningful and sustainable neighborhoods. Special focus selected by faculty. Open to all majors. Offered alternate years.

ARCH 534. Sustainable Urbanism. 3 Credits.
Seminar investigates contemporary trends and thinking about ‘Sustainable Urbanism’ and will evaluate these trends in light of their applicability to current design and development projects.

ARCH 535. Principles of Urban Design. 4 Credits.
Introduction to theory and practice of urban design, comparative studies of neighborhood conservation, central city regeneration, growth policies and prospects for restructuring cities, metropolitan regions.

ARCH 537. Theory of Urban Design II. 3 Credits.
Examines the cultural and formal ideas that underlie American and European urban design. 1700 to the present.

ARCH 538. Housing Prototypes. 3 Credits.
An examination of modern housing prototypes (1920s to the present) with an emphasis on understanding the many and varied factors involved in the production of quality housing. Open to all majors.

ARCH 539. Minimal Dwelling. 3 Credits.
Examination of the design of small dwelling units for a variety of users. Offered alternate years.

ARCH 540. Human Context of Design. 4 Credits.
Theoretical principles, case studies, and technical skills for assessing user needs, developing building programs, applying research findings to design, and evaluating performance of the built environment.
Requisites: Prereq: ARCH 680 or ARCH 683.

ARCH 547. Simulation and Visualization. 4 Credits.
Exploration of simulation tools to build skills to evaluate the performance of buildings for daylight, electric light, thermal comfort, and energy use.
Requisites: Prereq: ARCH 592.

ARCH 550. Spatial Composition. 4 Credits.
Architectural space as a means to measure existence and expand awareness. Focus on compositional principles in architecture and methods for analyzing and generating spatial organizations.
Requisites: Prereq: ARCH 680.

ARCH 558. Types and Typology. 3 Credits.
Critical introduction to theory of typology that categorizes urban and architectural forms by formal characteristics and cultural meaning. Lectures cover basic concepts, historical development, and case studies.
Requisites: Prereq: ARCH 550; ARCH 682 or ARCH 683.

ARCH 561. Structural Behavior. 4 Credits.
Develops understanding of behavior of structural elements and systems and their implications on architectural form with reference to historical and contemporary buildings.
Requisites: Prereq: ARCH 570.

ARCH 562. Structural Design. 4 Credits.
Historical development of materials. Analyzes elements, connections, and systems of wood, steel, and concrete structures from the perspective of construction process, spatial and structural design. Sequence with 561.
Requisites: Prereq: ARCH 561.

ARCH 570. Building Construction. 4 Credits.
Provide an understanding of the basic materials and methods of architecture with emphasis on the design, construction and performance of primary structure.
Requisites: Prereq: ARCH 680.

ARCH 571. Building Enclosure. 4 Credits.
Selection, design, detailing, and performance evaluation of building envelopes: wood, metals, glass, concrete, and masonry veneers and roofing.
Requisites: ARCH 562, ARCH 570, ARCH 591.

ARCH 572. Natural Building Systems and Materials: [Topic]. 4 Credits.
Investigations of inorganic and organic natural building materials, benefits, challenges, embodied energy and carbon, latest technological and process innovations, potential use in mainstream construction.
Requisites: Prereq: ARCH 570.

ARCH 573. Advanced Mass Timber Design. 4 Credits.
In-depth examination of mass timber buildings, advanced wood products, timber industry, production, integrated design process involving Architectural Engineering and Design industries, structural systems, and case studies.

ARCH 574. Design the Unseen: [Topic]. 4 Credits.
Advanced topics in the design of the unseen element in the built environment that impact the health of occupants, communities, and the planet.
Repeatable 2 times for a maximum of 12 credits when topic changes

ARCH 576. Residential Construction. 4 Credits.
Provides an understanding of basic materials and methods of North American residential construction with emphasis on design and construction of the wood light frame. Offered alternate years.

ARCH 580. Supervised Design Teaching. 1-3 Credits.
Supervised assistance with desk critiques and tasks related to studio teaching. Written application required.
Requisites: Prereq: ARCH 681 or ARCH 683.
Repeatable 2 times for a maximum of 3 credits

ARCH 584. Architectural Design. 6 Credits.
Repeatable. Design projects requiring comprehensive and integrative study over a wide range of project options. Individual criticism, group discussions, lectures and seminars by visiting specialists, public review of projects.
Requisites: Prereq: ARCH 682 or ARCH 683.
Repeatable 99 times

ARCH 585. Advanced Architectural Design I. 8 Credits.
In-depth work on complex design projects and design development beyond that normally possible in intermediate studios. Sequence.
Requisites: Prereq: 30 credits in ARCH 584.

ARCH 586. Advanced Architectural Design II. 8 Credits.
In-depth work on complex design projects and design development beyond that normally possible in intermediate studios.
Requisites: Prereq: ARCH 585.

ARCH 591. Environmental Control Systems I. 4 Credits.
Influence of energy source, climate, heating, cooling, lighting, acoustics, and water and waste systems on design of buildings and sites. Architectural and mechanical means to manipulate thermal environment. Sequence.
Requisites: Prereq: ARCH 680 or ARCH 683.

ARCH 592. Environmental Control Systems II. 4 Credits.
Influence of energy source, climate, heating, cooling, lighting, acoustics, and water and waste systems on design of buildings and sites. Implications of lighting, acoustics, and water and waste for architectural design.
Requisites: Prereq: ARCH 680 or ARCH 683.

ARCH 593M. Passive Cooling. 4 Credits.
Conceptual and quantitative investigations of passive cooling design and performance, including precedents, shading, natural ventilation, evaporative cooling, use of thermal mass, radiant cooling assisted by cold night skies, and control scheduling, supported by field investigations and introductory energy modeling. Multilisted with ENVS 593M.
Requisites: Prereq: ARCH 591.

ARCH 596. Passive House Design and Details. 4 Credits.
In-depth examination climate-specific passive house standard designing principles, building envelope detailing, mechanical systems, net zero design, dynamic modeling, and consultant certification.
Requisites: Prereq: ARCH 570, ARCH 591.

ARCH 598. High Performance Buildings Design: [Topic]. 4 Credits.
Integrated building design and simulation advanced architectural technology course covers the theory and history of high-performance buildings with topical applications of design strategies.
Repeatable 2 times for a maximum of 12 credits when topic changes

ARCH 601. Research: [Topic]. 1-6 Credits.
Disciplined inquiry of a topic with varying techniques and assignments suited to the nature and conditions of the problem being investigated. Often pursued in relation to a dissertation or thesis.
Repeatable 99 times

ARCH 603. Dissertation. 1-9 Credits.
A written document resulting from study or research and submitted as a major requirement for a degree.
Repeatable 99 times

ARCH 604. Internship: [Topic]. 1-9 Credits.
Professional practice in an organization that integrates concepts studied at the university with career-related work experience.
Repeatable 99 times

ARCH 605. Special Problems: [Topic]. 1-16 Credits.
Specialized inquiry into a particular topic by a student and discussed with a faculty member.
Repeatable 99 times

ARCH 606. Practicum: [Topic]. 1-16 Credits.
A series of clinical experiences under academic supervision designed to integrate theory and principles with practice.
Repeatable 99 times

ARCH 607. Seminar: [Topic]. 1-5 Credits.
A small group of students studying a subject with a faculty member. Although practices vary, students may do original research and exchange results through informal lectures, reports, and discussions.
Repeatable 99 times

ARCH 608. Workshop: [Topic]. 1-6 Credits.
An intensive experience, limited in scope and time, in which a group of students focus on skills development rather than content mastery.
Repeatable 6 times

ARCH 609. Terminal Project. 1-16 Credits.
A presentation incorporating the knowledge and skills acquired from course work completed for a degree.
Repeatable 99 times

ARCH 610. Experimental Course: [Topic]. 1-6 Credits.
Experimental course - topic varies.
Repeatable 99 times

ARCH 610L. Experimental Course: [Topic]. 1-4 Credits.
Experimental course - topic varies.
Repeatable 99 times

ARCH 611. Graduate Design Process. 3 Credits.
Foundation knowledge, concepts, and skills fundamental to design process and media subject areas.

ARCH 619. Terminal Project. 1-9 Credits.

Repeatable 99 times

ARCH 620. Research Methods in Sustainable Design. 2-6 Credits.
Research methods to assess the design of buildings and communities; discussions include defining research themes, hypotheses, and developing thesis proposals.
Requisites: Prereq: conditional MArch or PhD standing.

ARCH 622. Computational Design. 2 Credits.
This course will introduce computational design methods to support individual design intent through: Diagrams and 3D modeling; Analog Parametric Design and Lighting; Digital Parametric Design.
Requisites: Prereq: ARCH 611.
Repeatable 9 times for a maximum of 20 credits

ARCH 631. Global Modern Architecture. 4 Credits.
Graduate introduction to architectural history. Buildings and landscapes of the twentieth and twenty-first centuries, emphasizing interactions between Western and non-Western cultures.

ARCH 633. Fundamentals of Sustainable Design. 4 Credits.
Fundamentals of sustainable design practices; codes and standards related to building design; perspectives and implementation strategies by leading practitioners.

ARCH 661. Teaching Technical Subjects in Architecture. 1-3 Credits.
Covers techniques for effective teaching. Focuses on one or more standard building-technology courses in architecture and interior architecture.
Repeatable 3 times for a maximum of 12 credits

ARCH 680. Introductory Graduate Design I. 6 Credits.
Design projects and exercises intended to familiarize the student with fundamental concepts of environmental design. Emphasis on developing graphic skills and the capability for visual thinking that are essential to advanced studios. Sequence.

ARCH 681. Introductory Graduate Design II. 6 Credits.
Design projects and exercises intended to familiarize the student with fundamental concepts of environmental design. Emphasis on developing graphic skills and the capability for visual thinking that are essential to advanced studios. Sequence.
Requisites: Prereq: ARCH 680.

ARCH 682. Introductory Graduate Design III. 6 Credits.
Design projects and exercises intended to familiarize the student with fundamental concepts of environmental design. Emphasis on developing graphic skills and the capability for visual thinking that are essential to advanced studios.
Requisites: Prereq: ARCH 681.

ARCH 683. Introduction Graduate Design IV. 6 Credits.
Design to expand perception and response to issues in architectural design. Design as exploration of fundamental theoretical ideas. Studio projects require comprehensiveness and integrative study.
Repeatable 99 times

ARCH 695. Advanced Dissertation Proposal Development. 4-6 Credits.
Directed study for the development of dissertation proposals. Approval of faculty advisor required. Repeatable twice for a maximum of 18 credits based on development of proposal for dissertation.
Requisites: Prereq: PhD standing.
Repeatable 2 times for a maximum of 18 credits