

# Architecture (ARCH)

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Courses primarily for undergraduates:

## ARCH 201. Architectural Design I.

(1-15) Cr. 6. F. *Prereq:* Completion of the pre-professional program and admission into the professional program in Architecture

Introduction to architectural design. Introduction to architectural design, including precedent research, drawing conventions, model making, and diagramming. Studio projects focus on investigating the impact of specific site conditions on design, threshold conditions, and small-scale domestic space. Students will learn skills in problem solving, visualization, and written, oral, and graphic communication. Field trips to relevant architectural sites.

## ARCH 201H. Architectural Design I, Honors.

(1-15) Cr. 6-7. F. *Prereq:* Completion of the pre-professional program and admission into the professional program in Architecture

Introduction to architectural design. Introduction to architectural design, including precedent research, drawing conventions, model making, and diagramming. Studio projects focus on investigating the impact of specific site conditions on design, threshold conditions, and small-scale domestic space. Students will learn skills in problem solving, visualization, and written, oral, and graphic communication. Field trips to relevant architectural sites.

## ARCH 202. Architectural Design II.

(1-15) Cr. 6. S. *Prereq:* ARCH 201; MATH 142; PHYS 111

Continuation of fundamental architectural design exploration. Studio projects focus on the generation of ideas based on experience and an understanding of urban spaces. Emphasis on systematic analysis of urban culture, scale, materiality, and networks. Students work in groups and individually. Representational methods expand on architectural conventions through experimentation. Fieldtrips to relevant architectural sites.

## ARCH 202H. Architectural Design II, Honors.

(1-15) Cr. 6-7. S. *Prereq:* ARCH 201, MATH 142 and PHYS 111

Continuation of fundamental architectural design exploration. Studio projects focus on the generation of ideas based on experience and an understanding of urban spaces. Emphasis on systematic analysis of urban culture, scale, materiality, and networks. Students work in groups and individually. Representational methods expand on architectural conventions through experimentation. Fieldtrips to relevant architectural sites.

## ARCH 221. History of Architecture I.

(Cross-listed with DSN S). (3-0) Cr. 3. F.

Survey of western architectural ideas and practices in their social, cultural, and representational contexts. Comparisons with global examples. Ancient through 1750.

Meets International Perspectives Requirement.

## ARCH 222. History of Architecture II.

(Cross-listed with DSN S). (3-0) Cr. 3. S.

Survey of western architectural ideas and practices in their social, cultural and representational contexts. Comparisons with global examples. 1750 to present. Meets International Perspectives Requirement.

## ARCH 230. Design Communications I.

(2-2) Cr. 3. F. *Prereq:* Admission to the professional program in architecture

Investigations of various design media—including computer graphics and freehand drawing—and their applications to design, specifically to the course work in ARCH 201. Exercises to develop manual skill and perceptual sensitivity.

## ARCH 245. Building Science and Technology I.

(2-2) Cr. 3. F. *Prereq:* Admission to the professional program in architecture

Integrated architectural technology fundamentals in three modules: environmental, material, and structural technologies. Introductory topics include: sustainable considerations in environmental forces and systems, (solar orientation, climate, daylight, ventilation, human comfort & occupancy patterns), basic materials and assemblies (physical properties & building codes) and structural concepts (forces, equilibrium, and stability).

## ARCH 271. Human Behavior and Environmental Theory.

(3-0) Cr. 3. F. *Prereq:* Completion of the pre-professional program and admission into the professional program in architecture

Exploration of theories that describe social structure and order and the manner in which individuals and societies organize themselves and structure their environment.

## ARCH 301. Architectural Design III.

(1-15) Cr. 6. F. *Prereq:* ARCH 202

Consideration of landscape as a constructed, cultural artifact. Projects address the perceptual aspects and strategies of situation and location; examination of environmental phenomena and patterns of use and settlement as revealed and affected by the architectural artifact. Development of a critical design process is stressed.

## ARCH 301H. Architectural Design III, Honors.

(1-15) Cr. 6-7. F. *Prereq:* ARCH 202

Consideration of landscape as a constructed, cultural artifact. Projects address the perceptual aspects and strategies of situation and location; examination of environmental phenomena and patterns of use and settlement as revealed and affected by the architectural artifact. Development of a critical design process is stressed.

## ARCH 302. Architectural Design IV.

(1-15) Cr. 6. S. *Prereq:* ARCH 301 and minimum 2.0 GPA in previous studio courses

Continuation of ARCH 301, examining housing in the urban situation; diverse scales of use and occupation within the city as shaped by cultural tendencies. Projects examine collective and individual identities related by the condition of adjacency, the ability to consider varieties of scale within a project, and a further development of critical and technical methods.

## ARCH 302H. Architectural Design IV, Honors.

(1-15) Cr. 6-7. S. *Prereq:* ARCH 301 and minimum 2.0 GPA in previous studio courses

Continuation of ARCH 301, examining housing in the urban situation; diverse scales of use and occupation within the city as shaped by cultural tendencies. Projects examine collective and individual identities related by the condition of adjacency, the ability to consider varieties of scale within a project, and a further development of critical and technical methods.

## ARCH 310. Practical Experience.

Cr. R. *Prereq:* Permission of department chair

Students must register for this course prior to commencing each term. Available only to students taking course loads of eleven credits or less.

## ARCH 321. History of the American City.

(Cross-listed with DSN S). (3-0) Cr. 3. *Prereq:* Sophomore classification

Study of the development of the built environment and urban condition in the United States from the colonial period to today. Through the theme of infrastructure, primary attention is given to urban spatial organization, built form, technological change, regulatory and funding patterns, and social categories such as class, race, and gender. Nonmajor graduate credit.

Meets U.S. Diversity Requirement

## ARCH 334. Computer Applications in Architecture.

(2-2) Cr. 3.

Current and potential applications of digital computers in architecture. Projects employing computer graphics and modeling methods. Awareness of programming languages related to applications.

## ARCH 335. Three-Dimensional Studio.

(Cross-listed with ARTIS). (1-4) Cr. 3. Repeatable, maximum of 6 credits.

This course deals with three dimensional problems in visual invention, organization, and expression emphasizing creative manipulation of tools, materials, and techniques as means for three dimensional thinking. Projects cover the additive (modeling), subtractive (carving), substitutional (casting) as well as constructive techniques.

## ARCH 341. Building Science and Technology II.

(3-4) Cr. 5. S. *Prereq:* ARCH 245, MATH 142 and PHYS 111

Continued exploration of integrated architectural technology fundamentals in three modules: environmental, material, and structural technologies. Topics include environmental systems (building envelope systems and heat transfer, passive heating and cooling, daylighting, thermal comfort, analytical guidelines and calculation methods), materials & assemblies (composite building materials and framing systems) and structural systems (exploration relationship between applied forces and structural forms).

**ARCH 342. Building Science and Technology III.**(3-4) Cr. 5. F. *Prereq: ARCH 341*

In-depth explorations of integrated architectural technology fundamental topics in three modules: environmental, material, and structural technologies with a focus on sustainable concepts and formal/material explorations. Examination of a design process that incorporates climate into the control of thermal, luminous, and acoustic environments. Introduction to plumbing systems. Complex construction assemblies and large-scale construction will be studied. Structural components (beams, columns, & slabs) will be designed, computed, and analyzed.

**ARCH 343. Building Science and Technology IV.**(3-4) Cr. 5. S. *Prereq: ARCH 342*

In-depth explorations of fundamental integrated architectural technology topics in three modules: environmental, material, and structural technologies with a focus on sustainable concepts and formal/material explorations. An overview of active environmental control systems in response to occupant comfort, patterns of use, health, and safety regulations. Use and design of mechanical, electrical, plumbing, fire safety, transportation, and conveying systems and subsystems. Structural module investigates complex structural systems and behaviors with a focus on documentation and integration with other building technologies.

**ARCH 351. Whole Building Energy Performance Modeling.**(Cross-listed with DSN S). (3-0) Cr. 3. S. *Prereq: ARCH 202, 245, 341. Open to non-majors by permission of instructor.*

Architectural design, design evaluation and technical analysis using energy performance modeling tools. Emphasis will be given to whole building energy efficiency including passive and active systems integration.

**ARCH 401. Architectural Design V.**(1-15) Cr. 6. F. *Prereq: ARCH 302*

A rigorous examination of how buildings participate sustainably in socio-political and environmental systems. Student projects consider in a comprehensive proposal how issues of physical site, socio-economic context, programming, structure, form, materiality, and building systems are interconnected through the design process and within the built environment. Projects typically focus on a smaller scale urban public building that is closely connected to its physical, environmental, and social context.

**ARCH 401H. Architectural Design V, Honors.**(1-15) Cr. 6-7. F. *Prereq: ARCH 302*

A rigorous examination of how buildings participate sustainably in socio-political and environmental systems. Student projects consider in a comprehensive proposal how issues of physical site, socio-economic context, programming, structure, form, materiality, and building systems are interconnected through the design process and within the built environment. Projects typically focus on a smaller scale urban public building that is closely connected to its physical, environmental, and social context.

**ARCH 402. Architectural Design VI.**(1-15) Cr. 6. S. *Prereq: ARCH 401 and minimum 2.0 GPA in previous studio courses*

An examination of the relationship between architecture and the city. Studio projects stress analysis and interpretation of the diverse forces and conditions that impact and inform architecture in the urban environment. Urban design project. Study abroad option.

Meets International Perspectives Requirement.

**ARCH 402H. Honors (6-7 cr.).**(1-15) Cr. 6. S. *Prereq: 401 and minimum 2.0 GPA in previous studio courses*

An examination of the relationship between architecture and the city. Studio projects stress analysis and interpretation of the diverse forces and conditions that impact and inform architecture in the urban environment. Urban design project. Study abroad option.

Meets International Perspectives Requirement.

**ARCH 403. Architectural Design VII.**(1-15) Cr. 6. F. *Prereq: ARCH 402*

A rigorous examination of architecture's relationship with culture and technology. Studio projects stress the interpretation and integration of contextual and historical considerations, as well as structural, environmental, and communication systems, in a comprehensive design proposal.

**ARCH 403H. Architectural Design VII, Honors.**(1-15) Cr. 6-7. F. *Prereq: ARCH 402*

A rigorous examination of architecture's relationship with culture and technology. Studio projects stress the interpretation and integration of contextual and historical considerations, as well as structural, environmental, and communication systems, in a comprehensive design proposal.

**ARCH 404. Architectural Design VIII.**(1-15) Cr. 6. S. *Prereq: ARCH 403*

Advanced forum for architectural research and/or design. Choice of thematic studios or student initiated research and design. Experimentation and innovation are encouraged. DSN S 446 or DSN S 546, for 6 cr. each time taken, can be substituted for this class and be taken up to a maximum of 12 credits.

**ARCH 404H. Architectural Design VIII, Honors.**(1-15) Cr. 6-7. S. *Prereq: ARCH 403*

Advanced forum for architectural research and/or design. Choice of thematic studios or student initiated research and design. Experimentation and innovation are encouraged. DSN S 446 or DSN S 546, for 6 cr. each time taken, can be substituted for this class and be taken up to a maximum of 12 credits.

**ARCH 420. Topics in American Architecture.**(3-0) Cr. 3. Repeatable, maximum of 6 credits. *Prereq: Junior classification*

History, theory, and principles of American architecture and urban design considering relationships to the culture, visual arts, site, and surroundings. Credit counts toward fulfillment of Studies in Architecture and Culture requirements. Nonmajor graduate credit. A maximum of 6 credits of ARCH 420 may be applied to degree program.

Meets U.S. Diversity Requirement

**ARCH 422. Topics in Medieval Architecture.**(3-0) Cr. 3. Repeatable, maximum of 6 credits. S. *Prereq: Junior classification*

History, theory, and principles of medieval architecture and urban design considering relationships to the culture, visual arts, site, and surroundings. Credit counts toward fulfillment of Studies in Architecture and Culture requirements. Nonmajor graduate credit. A maximum of 6 credits of ARCH 422 may be applied to degree program.

Meets International Perspectives Requirement.

**ARCH 423. Topics in Renaissance to Mid-Eighteenth Century Architecture.**(3-0) Cr. 3. Repeatable, maximum of 6 credits. S. *Prereq: Junior classification*

History, theory, and principles of renaissance to mid-eighteenth century architecture and urban design considering relationships to the culture, visual arts, site, and surroundings. Credit counts toward fulfillment of Studies in Architecture and Culture requirements. Nonmajor graduate credit. A maximum of 6 credits of ARCH 423 may be applied to degree program.

Meets International Perspectives Requirement.

**ARCH 424. Topics in Nineteenth Century Architecture.**(3-0) Cr. 3. Repeatable, maximum of 6 credits. F. *Prereq: Junior classification*

History, theory, and principles of nineteenth century architecture and urban design considering relationships to the culture, visual arts, site, and surroundings. Credit counts toward fulfillment of Studies in Architecture and Culture requirements. Nonmajor graduate credit. A maximum of 6 credits of ARCH 424 may be applied to degree program.

**ARCH 425. Topics in Twentieth Century Architecture.**(3-0) Cr. 3. Repeatable, maximum of 6 credits. *Prereq: Junior classification*

History, theory, and principles of twentieth century architecture and urban design considering relationships to the culture, visual arts, site, and surroundings. Credit counts toward fulfillment of Studies in Architecture and Culture requirements. Nonmajor graduate credit. A maximum of 6 credits of ARCH 425 may be applied to degree program.

**ARCH 426. Topics in Native American Architecture.**(Cross-listed with AM IN, DSN S). (3-0) Cr. 3. Repeatable, maximum of 6 credits. *Prereq: Junior classification*

History, theory, and principles of Native American/American Indian architecture, landscape architecture and planning considering relationships to the culture, visual arts, site, and surroundings. Credit counts toward fulfillment of Studies in Architecture and Culture. Nonmajor graduate credit. A maximum of 6 credits of ARCH 426 may be applied to degree program.

Meets U.S. Diversity Requirement

**ARCH 427. History, Theory, and Criticism of Chinese Architecture.**(Dual-listed with ARCH 527). (3-0) Cr. 3. F. *Prereq: Junior classification*

The history and theoretical concept of Chinese built environment with emphasis on the morphology of built form and its relationship to art, landscape design, and urban structure. Credit counts toward fulfillment of Studies in Architecture and Culture. Nonmajor graduate credit.

Meets International Perspectives Requirement.

**ARCH 429. Topics in Italian Architecture and Urbanism.**

(3-0) Cr. 3. S.

History, theory and principles of Italian architecture and urban design considering relationships to the culture, visual arts, site, and surroundings.

**ARCH 431. Analytical Drawing.**

(1-6) Cr. 3. Repeatable, maximum of 12 credits. F.S. *Prereq:* ARCH 230 and ARCH 302

Exploration of 2- and 3-dimensional representations. Emphasis on on-site freehand sketching, perspective and orthographic drawing, rendering of shadows and textures, and use of diverse media.

**ARCH 432. Advanced Computer Lighting and Rendering.**

(3-0) Cr. 3. Repeatable, maximum of 6 credits. *Prereq:* ARCH 230 and ARCH 301

Exploration of the computer as a design and communication tool. Emphasis on lighting and rendering techniques.

**ARCH 433. File to Fabrication.**

(3-0) Cr. 3. Repeatable, maximum of 6 credits. F.S. *Prereq:* ARCH 230 and ARCH 301

Exploration of the computer as a design and manufacturing tool. Emphasis on fabrication techniques and rapid prototyping including laser-cutting, 3-D printing and CNC routing.

**ARCH 434. Computer-aided Architectural and Environmental Design.**

(1-4) Cr. 3. *Prereq:* ARCH 334

Emphasis on application of the computer as a design tool, topical applications and computer graphic methods, development of computer software for architectural and environmental problem solving. Nonmajor graduate credit.

**ARCH 436. Advanced Design Media.**

(2-2) Cr. 3. Repeatable. F.S.S. *Prereq:* ARCH 230

Special topics in design media applications.

**ARCH 437. Architectural Photography.**

(3-0) Cr. 3. *Prereq:* ARCH 202

Emphasis on use of the camera and lighting in photographing drawings and interior and exterior building environments. Nonmajor graduate credit.

**ARCH 445. Building Science and Technology V.**

(2-2) Cr. 3. F. *Prereq:* ARCH 343

Technical topics which ground architectural design decisions and concepts in the physical world and the human perception thereof and have environmental sustainability as an emphasis. Synthesis of material, environmental, structural and systems design and related design modeling and simulation.

**ARCH 482. Professional Practice.**

(Dual-listed with ARCH 582). (3-0) Cr. 3. F. *Prereq:* ARCH 202

Emphasis on the circumstances and opportunities of the professional practice of architecture: practice as profession, process, organization, business, and evolving models of practice.

**ARCH 486. Design: Made in Italy.**

(Cross-listed with DSN S). (3-0) Cr. 3. S.

An investigation of the history of Italian design in its contemporary form as part of International study abroad program in Rome.

**ARCH 490. Independent Study.**

Cr. 1-9. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on required form  
Independent investigation.

**ARCH 490A. Design Communications..**

Cr. 1-9. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on required form  
Independent investigation.

**ARCH 490B. Design.**

Cr. 1-9. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on required form  
Independent investigation.

**ARCH 490C. Technical Systems..**

Cr. 1-9. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on required form  
Independent investigation.

**ARCH 490D. Architectural History.**

Cr. 1-9. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on required form  
Independent investigation.

**ARCH 490E. Behavioral Studies.**

Cr. 1-9. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on required form  
Independent investigation.

**ARCH 490F. Practice.**

Cr. 1-9. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on required form  
Independent investigation.

**ARCH 490H. Independent Study, Honors.**

Cr. 1-9. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on required form  
Independent investigation.

**Courses primarily for graduate students, open to qualified undergraduates:**

**ARCH 505. Architectural Design and Media I: Mapping, Programming, Building.**

(0-10) Cr. 5. F. *Prereq:* Admission to the M Arch program. Concurrent enrollment in ARCH 541 and ARCH 595

An introduction to comprehensive architectural design projects that focuses on three interrelated design skills: mapping, programming and building. Projects establish a framework for designing buildings that considers multiple factors such as environmental forces, construction methods, building codes, urban regulations, social relationships, and cultural values.

**ARCH 506. Architectural Design and Media II: Materiality and Representation.**

(0-10) Cr. 5. S. *Prereq:* ARCH 505, ARCH 541, ARCH 595 and concurrent enrollment in ARCH 542 and ARCH 596

Small-scale architectural design projects that investigate design representation through analogue and digital means. The projects explore different representation strategies to help students develop an understanding of the particular modes of architectural representation that advance the designer's knowledge of space as a complex interaction between materials with inherent physical characteristics, mobile socializing bodies, and changing environmental cycles.

**ARCH 507. Architectural Design and Media III: Design in Detail.**

(0-10) Cr. 5. SS. *Prereq:* ARCH 506, ARCH 542, ARCH 596 and concurrent enrollment in ARCH 581

Design projects that emphasize the multi-faceted role of the architectural detail in the design process through first, understanding the historical specificity of building construction and detailing; second, utilizing working drawing as a mode of communication; and third, designing with details. The term-long project will consider a set of working drawings of past buildings as a site for design intervention.

**ARCH 510. Practical Experience.**

Cr. R. Repeatable. F.S.SS. *Prereq:* Graduate standing and permission of department DOGE

Students must register for this course prior to commencing each period. Available only to students taking course loads of 8 credits or less.

**ARCH 519. Middle Eastern Cities.**

(Cross-listed with C R P). (3-0) Cr. 3. *Prereq:* Graduate or Senior classification

Introduction to basic academic writings on Middle Eastern cities in addition to other contemporary cultural productions of the region. Study of various aspects of Middle Eastern life and the built environments that this life produces. Meets International Perspectives Requirement.

**ARCH 527. History, Theory, and Criticism of Chinese Architecture.**

(Dual-listed with ARCH 427). (3-0) Cr. 3. *Prereq:* Graduate or Senior classification

The history and theoretical concept of Chinese built environment with emphasis on the morphology of built form and its relationship to art, landscape design, and urban structure. Credit counts toward fulfillment of Studies in Architecture and Culture requirements.

Meets International Perspectives Requirement.

**ARCH 528. Topical Studies in Architecture.**

(Cross-listed with DSN S). (3-0) Cr. 2-3. Repeatable, maximum of 6 times. *Prereq:* ARCH 221, ARCH 222 or senior classification or graduate standing

**ARCH 528A. Studies in Architecture: Culture.**

(Cross-listed with DSN S). (3-0) Cr. 2-3. Repeatable, maximum of 6 times. *Prereq:* ARCH 221, ARCH 222 or senior classification or graduate standing

**ARCH 528B. Studies in Architecture: Technology.**

(Cross-listed with DSN S). (3-0) Cr. 2-3. Repeatable, maximum of 6 times. *Prereq:* ARCH 221, ARCH 222 or senior classification or graduate standing

**ARCH 528C. Studies in Architecture: Communications.**

(Cross-listed with DSN S). (3-0) Cr. 2-3. Repeatable, maximum of 6 times. *Prereq:* ARCH 221, ARCH 222 or senior classification or graduate standing

**ARCH 528D. Studies in Architecture: Design.**

(Cross-listed with DSN S). (3-0) Cr. 2-3. Repeatable, maximum of 6 times. *Prereq:* ARCH 221, ARCH 222 or senior classification or graduate standing

**ARCH 528E. Studies in Architecture: Practice.**

(Cross-listed with DSN S). (3-0) Cr. 2-3. Repeatable, maximum of 6 times. *Prereq:* ARCH 221, ARCH 222 or senior classification or graduate standing

**ARCH 529. Spatial Dialectics in the American Midwest.**

(3-0) Cr. 3. *Prereq:* Graduate or Senior classification

The American Midwest has witnessed dramatic transformation during the last two centuries which impacted its physical, environmental, economic and social characteristics. This course is an interdisciplinary study of the evolution and sustainability of Midwestern space in relationship to forces of flow shaped by the mobility of bodies, products, meanings, and symbols that are enforced, incorporated, reproduced or destroyed.

Meets U.S. Diversity Requirement

**ARCH 534. Advanced Computer-aided Architectural Design.**

(1-4) Cr. 3. Repeatable, maximum of 6 credits. F. *Prereq:* ARCH 434 and permission of instructor

Emphasis on concepts, algorithms, data structures, advanced modeling, rendering, animation, and virtual reality applications in architectural design.

**ARCH 535. Advanced Three-Dimensional Studio.**

(1-4) Cr. 3. Repeatable, maximum of 6 credits. *Prereq:* ARCH 335 or Graduate classification

Advanced investigation of sculptural expression with emphasis on individual projects.

**ARCH 541. Science and Technology for Architects I.**

(4-2) Cr. 5. F. *Prereq:* Admission to the M. Arch. program and concurrent enrollment in ARCH 505 and 595

Introduction to Human Factors, Descriptive Geometry, Basic Building Materials, and Small-Scale Building Envelopes. Theory and case studies, stressing the connectivity of technical issues to broader formal, social, and cultural spheres.

**ARCH 542. Science and Technology for Architects II.**

(4-2) Cr. 5. S. *Prereq:* ARCH 505, ARCH 541, ARCH 595 and concurrent enrollment in ARCH 506 and ARCH 596

Elementary Statics and Beam Theory, Basic Construction Materials, and Site and Building Circulation. Theory and case studies stressing the connectivity of technical issues to broader formal, social, and cultural spheres.

**ARCH 558. Sustainability and Green Architecture.**

(Cross-listed with DSN S). (3-0) Cr. 3. F. *Prereq:* Graduate classification

Issues of Sustainability as related to living patterns and city design, population, pollution and use and availability of natural resources for the built environment; Issues of Green Architecture as it relates to building material selection, systems of building materials, the environment of the United States and the World, architects and examples of buildings with green or sustainable designations.

**ARCH 567. Preservation, Restoration, and Rehabilitation.**

(Cross-listed with DSN S). (3-0) Cr. 3. S. *Prereq:* Senior classification

Construction standards and procedures for preserving, restoring, reconstructing, and rehabilitating existing buildings following the guidelines of the National Park Service and the National Trust for Historic Preservation. Credit counts toward fulfillment of Studies in Architecture and Culture requirements.

**ARCH 571. Design for All People.**

(Cross-listed with DSN S, GERON). (3-0) Cr. 3. S. *Prereq:* Graduate or Senior classification

Principles and procedures of universal design in response to the varying ability level of users. Assessment and analysis of existing buildings and sites with respect to standards and details of accessibility for all people, including visually impaired, mentally impaired, and mobility restricted users. Design is neither a prerequisite nor a required part of the course. Enrollment open to students majoring in related disciplines. Credit counts toward fulfillment of Studies in Architecture and Culture requirements.

Meets U.S. Diversity Requirement

**ARCH 575. Contemporary Urban Design Theory.**

(Cross-listed with DSN S). (3-0) Cr. 3. S. *Prereq:* Graduate or Senior classification

Current urban design theory and its application to urban problems. Credit counts toward fulfillment of Studies in Architecture and Culture requirements.

**ARCH 576. Study Abroad Options.**

Cr. 1-12. Repeatable, maximum of 12 credits. SS.

Special topics in environmental design, architectural history and contemporary practice. Travel to relevant countries. General cultural and historical studies, topical projects and individual inquiry. Courses may be taught by departmental faculty or faculty from approved Iowa State Study Abroad programs. See current offerings for detailed syllabus.

Meets International Perspectives Requirement.

**ARCH 581. Service Learning.**

(1-12) Cr. 5. SS. *Prereq:* ARCH 506, 542 and ARCH 596

Planning and execution of a project serving a community need. Learning occurs through both theory and active involvement in on-site work. Projects connect previous coursework to practical applications and community involvement.

**ARCH 582. Professional Practice.**

(Dual-listed with ARCH 482). (3-0) Cr. 3. F. *Prereq:* Graduate classification

Emphasis on the circumstances and opportunities of the professional practice of architecture: practice as profession, process, organization, business, and evolving models of practice.

**ARCH 583. Research in Practice.**

(3-0) Cr. 3. S. *Prereq:* Graduate or Senior classification

Foundational course in the methods and conceptual tools of design research in the context of practice. Through team and individual guided projects, students generate, analyze and represent knowledge in design-related communications and contexts. Alternative models of practice, client groups and communities are addressed within projects that precede, feed, follow, or overlap with architectural contracts.

**ARCH 590. Special Topics.**

Cr. 1-5. Repeatable. F.S.SS. *Prereq:* Written approval of instructor and department chair on approved form

Investigation of architectural issues having a specialized nature.

**ARCH 595. Seminar on the Built Environment I: History.**

(5-0) Cr. 5. F. *Prereq:* Admission to the M. Arch. program and concurrent enrollment in ARCH 505 and ARCH 541

Introduction to historical canons and traditions of architecture and urbanism. Discussion of the relationship between historical inquiry and contemporary practice. Students learn skills in critical thinking, visual analysis, and research methods. Course sessions develop thematically with interdisciplinary readings, group discussions, student presentations, and research projects.

**ARCH 596. Seminar on the Built Environment II: Landscape and Society.**

(5-0) Cr. 5. S. *Prereq:* ARCH 505, ARCH 541, ARCH 595 and concurrent enrollment in ARCH 506 and ARCH 542

Introduction to landscape as artifact and multi-disciplinary knowledge-base for design thinking. Literatures and methods of environmental psychology, cultural geography, landscape and architectural history and theory, site and circulation design as intersection of built infrastructural, natural, and social systems. Emphasis on sensory perception, and human movement; investigations of climate, environmental conditions, and values toward consumption and sustainability in everyday experience of the built environment.

**ARCH 597. Seminar on the Built Environment III: Theory.**

(3-0) Cr. 3. F. *Prereq:* Graduate or Senior classification

Multidisciplinary overview of contemporary theories concerned with the production of the built environment. Particular attention to urbanism as a discourse that relates social interactions and power structures to material space.

Meets International Perspectives Requirement.

**ARCH 598. Seminar on the Built Environment IV: Topical Study.**

(3-0) Cr. 3. S. *Prereq:* Graduate or Senior classification

A research seminar which considers a topic within contemporary discourses on the built environment outside of Europe and North America. The topic will be studied from multiple perspectives highlighting the historical and theoretical relationships between architecture, global cultures, geography, landscape, and urban planning. Credit counts toward fulfillment of Studies in Architecture and Culture requirements.

**Courses for graduate students:**

**ARCH 601. Sustainable Building Design.**

(0-12) Cr. 6. F. *Prereq:* ARCH 507, ARCH 542, ARCH 596 and concurrent enrollment in ARCH 643

Design projects that are developed through integrative design strategies that explore the relationship between buildings and environmental forces to maximize non-wasteful, efficient use of resources such as energy, water and building materials. Projects will include investigations of the impact of solar energy, airflow, building materials, passive and active systems and wall sections on spatial quality and form making. Design decisions will be quantitatively validated through energy modeling and performance simulation.

**ARCH 602. Community, Building and the Environment.**

(0-12) Cr. 6. S. *Prereq:* ARCH 601, ARCH 643, ARCH 597 and concurrent enrollment in ARCH 644

Design projects that explore the relationships between architectural, cultural, and environmental landscapes. Emphasis on regional sites, socio-economic conditions, and sustainable design and planning practices at multiple scales. Projects stress engagement with local circumstances and stakeholders; systemic interconnections and strategies; and the application of interdisciplinary research.

**ARCH 603. Comprehensive Design.**

(0-12) Cr. 6. F. *Prereq:* ARCH 601

Rigorous examination of architecture's relationship with culture and technology. Studio projects stress the interpretation of contextual and historical considerations, as well as structural, environmental, mechanical, electrical and plumbing systems, in a comprehensive design proposal. This course fulfills the Graduate College Creative Component Requirement.

**ARCH 604. Design Studio Options.**

(0-12) Cr. 6. Repeatable, maximum of 12 credits. S. *Prereq:* ARCH 602

Design studio selected by the students, which may include but is not limited to: independent design study, interdisciplinary design studio, study abroad, and design build. DSN S 546 for 6 cr. may be substituted for this course.

**ARCH 643. Science and Technology for Architects III.**

(2-2) Cr. 3. F. *Prereq:* ARCH 507, ARCH 542, ARCH 596, ARCH 581 and concurrent enrollment in ARCH 601 or Graduate classification and concurrent enrollment in ARCH 601

Third in a four-course series in building science and technologies. Structural Elements and Systems, and Building Services. Theory and case studies stressing the connectivity of technical issues to broader formal, social and cultural spheres.

**ARCH 644. Science and Technology for Architects IV.**

(2-2) Cr. 3. S. *Prereq:* ARCH 643 or Graduate classification

Fourth of a four-course series in building science and technologies. Building Enclosures, Interior Construction and Sensory Qualities, Fabrication and Construction. Theory and case studies stressing the connectivity of technical issues to broader formal, social and cultural spheres. Summative Student Project.

**ARCH 690. Independent Design Study.**

(1-15) Cr. 6. Repeatable. F.S.SS. *Prereq:* Admission to the M. S. in Arch. program  
Independent architectural design projects commensurate with student interests requiring approval of Architecture Graduate Committee.

**ARCH 698. Graduate Seminar.**

Cr. R. Repeatable. F.S. *Prereq:* Admission to the M. Arch. or M. S. in Arch. programs

Special topics and guest speakers.

**ARCH 699. Research.**

(1-18) Cr. 3-9. Repeatable. F.S.SS.