

# ARCHITECTURE (ARCH)

## ARCH 107 Sustainability Basics and the Built Environment

**Description:** Introduction to the fundamentals, principles and current assessments relative to responsible, sustainable design as applied to the built environment.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**ACE:** ACE 8 Civic/Ethics/Stewardship

## ARCH 210 Architectural Design Studio: Representation

**Prerequisites:** Admitted to Professional Architecture Program

**Notes:** Letter grade only

**Description:** Introduction to architectural design through reflective and projective techniques. Divergent and convergent approaches focus on fundamental ways in which user(s), matter, and environment inform architecture.

**Credit Hours:** 5

**Max credits per semester:** 5

**Max credits per degree:** 5

**Grading Option:** Graded

**Prerequisite for:** ARCH 211; ARCH 310

## ARCH 211 Architectural Design Studio: Ideation

**Prerequisites:** ARCH 210

**Notes:** Letter grade only

**Description:** Consideration of multiple parameters including structure, organization, and material acknowledging their potential to inform each other. Exercises will engage a student's ability to effectively and persuasively communicate design positions with regards to appropriateness.

**Credit Hours:** 5

**Max credits per semester:** 5

**Max credits per degree:** 5

**Grading Option:** Graded

**Prerequisite for:** ARCH 310

## ARCH 222 BIM for Design - Introduction to BIM

**Prerequisites:** Admission to the Architecture Program

**Notes:** This course is a mini course, not a semester-long course.

**Description:** Introduction to Building Information Modeling (BIM) and its application for design. An overview of the capabilities of BIM for 3D modeling, information tracking, documentation, and collaboration.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

## ARCH 231 Structural Fundamentals

**Prerequisites:** Admission to a professional program in the College of Architecture or permission.

**Description:** Introduction to the concept of structure as integral and essential to architectural design. Exposure to basic physical principles and structural systems.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

## ARCH 232 Materials and Assemblies

**Prerequisites:** Admission to a professional program in the College of Architecture

**Description:** Introduction to materials and assemblies with an emphasis on design implications and contemporary practices.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** ARCH 331, CNST 331

## ARCH 240 Architecture History and Theory I

**Description:** Survey of the development of architecture from prehistory to the mid-eighteenth century.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** ARCH 341

**ACE:** ACE 7 Arts ACE 5 Humanities

## ARCH 241 Architecture History and Theory II

**Description:** Survey of the history and theory of architecture from the mid-eighteenth century to the present day.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** ARCH 262; ARCH 341

**ACE:** ACE 7 Arts ACE 5 Humanities

## ARCH 262 Building Organization

**Prerequisites:** Admission to a professional program in the College of Architecture, or DSGN 110 and ARCH 241

**Description:** Introduction to spatial organizations as related to architectural programming and the design process. Exposure to common types of organizational configurations, the forces that shape them, and their consequential affects.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

## ARCH 310 Architectural Design Studio: Organize

**Prerequisites:** ARCH 210, ARCH 211

**Description:** Architectural design creating a complex programmatic and spatial organization. Creation/critique of design program; the proposal of plausible structure, material and their expressions; and the exploration of analytical and expressive potentials of representation.

**Credit Hours:** 5

**Max credits per semester:** 5

**Max credits per degree:** 5

**Grading Option:** Graded

**ARCH 311 Architectural Design Studio: Situate**

**Crosslisted with:** ARCH 311H

**Prerequisites:** ARCH 310

**Description:** Architectural design creating effective and appropriate relationships with manmade/natural environments. Selection/critique of site; the analysis and documentation of contextual conditions; and the incorporation of structure, material, and their expressions into design.

**Credit Hours:** 5

**Max credits per semester:** 5

**Max credits per degree:** 5

**Grading Option:** Graded

**Prerequisite for:** ARCH 430, ARCH 430H; DSGN 410

**ARCH 311H Architectural Design Studio: Situate**

**Crosslisted with:** ARCH 311

**Description:** Architectural design creating effective and appropriate relationships with manmade/natural environments. Selection/critique of site; the analysis and documentation of contextual conditions; and the incorporation of structure, material, and their expressions into design.

**Credit Hours:** 5

**Max credits per semester:** 5

**Max credits per degree:** 5

**Grading Option:** Graded

**Prerequisite for:** ARCH 430, ARCH 430H; DSGN 410

**ARCH 327 Parametric Modeling for Design**

**Prerequisites:** DSGN 123

**Description:** Introduction to parametric and related basic computational concepts for design. Explorations in specific parametric modeling software techniques.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

**ARCH 331 Structural Mechanics**

**Crosslisted with:** CNST 331

**Prerequisites:** ARCH 232 or admission into the Construction Management degree program

**Description:** Introduction to various external force systems, and their resulting internal forces and deformations, which act on structural elements.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** ARCH 332, CNST 332

**ARCH 332 Structural Optimization**

**Crosslisted with:** CNST 332

**Prerequisites:** ARCH 331

**Description:** Optimization of key properties of elemental components and systems of building structures: force, geometric, and material.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** ARCH 430, ARCH 430H

**ARCH 333 Building Environmental Technical Systems I**

**Crosslisted with:** CNST 305

**Prerequisites:** PHYS 151.

**Description:** Characteristics and performance of buildings with respect to thermal and psychrometric environment in buildings related to human comfort, heat gain/heat loss, ventilation, natural energy systems and sustainable design principles, and plumbing and life safety systems in the Built environment.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** ARCH 430, ARCH 430H; CNST 405

**ARCH 334 Building Environmental Technical Systems II**

**Crosslisted with:** IDES 334

**Prerequisites:** Admission to a professional program in the College of Architecture

**Description:** Architectural lighting and acoustical systems of buildings for non-engineers. Fundamentals of light and vision, lighting equipment, requirements for building lighting, fundamentals of sound and hearing, room acoustics, noise control, and basic design methods for both architectural lighting and acoustics.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**ARCH 341 Architectural Theory**

**Prerequisites:** ARCH 240 and 241.

**Notes:** Organized thematically.

**Description:** Architectural theory. Written accounts on what architecture should be and why. Compare a number of positions on particular issues that have persisted through the history of architectural theory.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**ARCH 347 African Architecture**

**Crosslisted with:** ARCH 547, AHIS 366

**Prerequisites:** Sophomore standing or above.

**Description:** Survey of the architectural traditions of the African continent, from pre-historic times to the present day. Buildings-famous and typical-theories, and approaches that are appropriate to the specific cultural environments.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**ARCH 360 Site Context Issues**

**Crosslisted with:** ARCH 360H

**Prerequisites:** ARCH 310

**Description:** Investigation of the interrelationship among the physical context as created by nature and humanity, the various design professions concerned with site development and architectural ideas. Site analysis, research, selection, and development projects along with practical exercises form the basis of the lab experience.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** ARCH 430, ARCH 430H

### ARCH 360H Site Context Issues

**Crosslisted with:** ARCH 360

**Description:** Investigation of the interrelationship among the physical context as created by nature and humanity, the various design professions concerned with site development and architectural ideas. Site analysis, research, selection, and development projects along with practical exercises form the basis of the lab experience.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Prerequisite for:** ARCH 430, ARCH 430H

### ARCH 392 Selected Topics in Architecture

**Prerequisites:** Permission.

**Description:** Group investigation of a topic in architecture originated by the instructor.

**Credit Hours:** 1-6

**Min credits per semester:** 1

**Max credits per semester:** 6

**Max credits per degree:** 6

**Grading Option:** Graded

### ARCH 396 Problems in Architecture

**Prerequisites:** Permission.

**Description:** Individual investigation of a topic in architecture.

**Credit Hours:** 1-6

**Min credits per semester:** 1

**Max credits per semester:** 6

**Max credits per degree:** 6

**Grading Option:** Graded

### ARCH 411 Architectural Design: Integrate

**Crosslisted with:** ARCH 411H

**Prerequisites:** DSGN 410, or by permission

**Description:** Continuation of complex problems as it relates to the integration and consideration of environmental stewardship, technical documentation, accessibility, site design, life safety, environmental systems, structural systems, and building envelope systems and assemblies, emphasizing technological considerations as formal and organizational determinants.

**Credit Hours:** 5

**Max credits per semester:** 5

**Max credits per degree:** 5

**Grading Option:** Graded

**ACE:** ACE 10 Integrated Product

### ARCH 411H Architectural Design: Integrate

**Crosslisted with:** ARCH 411

**Prerequisites:** DSGN 410, or by permission

**Description:** Continuation of complex problems as it relates to the integration and consideration of environmental stewardship, technical documentation, accessibility, site design, life safety, environmental systems, structural systems, and building envelope systems and assemblies, emphasizing technological considerations as formal and organizational determinants.

**Credit Hours:** 5

**Max credits per semester:** 5

**Max credits per degree:** 5

**Grading Option:** Graded

**ACE:** ACE 10 Integrated Product

### ARCH 417 Product Design

**Crosslisted with:** ARCH 617, ARCH 817, IDES 417, IDES 817, LARC 417

**Prerequisites:** IDES 201, IDES 301 (or DSGN 421, 422 & 423), IDES 416

**Description:** Generate a design from conception to a finished product that emphasizes the awareness of the human and the environment in the creation of product design solutions.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Offered:** SPRING

**Course and Laboratory Fee:** \$100

### ARCH 418 Fabrication and Construction Team

**Crosslisted with:** ARCH 518, ARCH 818

**Prerequisites:** Permission.

**Description:** The shifting relationship between conceiving and making through hands-on, collaborative experience with actual design-construct projects in which students play a decisive role in all aspects of research, design and construction of the commission.

**Credit Hours:** 1-6

**Min credits per semester:** 1

**Max credits per semester:** 6

**Max credits per degree:** 6

**Grading Option:** Graded

### ARCH 428 BIM: Analysis

**Crosslisted with:** ARCH 528, ARCH 828

**Prerequisites:** ARCH 222

**Description:** Introduction to the principles and techniques of "GiM" (geometry information modeling) and analysis. Explores how "GiM" is essential to the concept of "BiM" (building information modeling) and how it is used in conjunction with different types of analytical modeling.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

**Offered:** SPRING

### ARCH 429 BIM: Interoperability

**Crosslisted with:** ARCH 529, ARCH 829

**Prerequisites:** ARCH 222

**Description:** Cover the basics of data and interoperability, including the definitions of key terms and an overview of the various technologies to facilitate data exchange between different systems and platforms.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Grading Option:** Graded

**Offered:** SPRING

**ARCH 430 Technological Integration****Crosslisted with:** ARCH 430H**Prerequisites:** ARCH 311, 332, 333, 360. Parallel: ARCH 411.

**Description:** Integrative study of structural, building technology, and environmental technology systems in a building within the context of ARCH 411. Emphasis on the role structural, mechanical systems, and assemblages play in the evolution of an architectural design project. Students illustrate an understanding of the principles which underlie each of the technical systems and demonstrate the ability to apply those principles to the design project.

**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**Offered:** SPRING**ARCH 430H Technological Integration****Crosslisted with:** ARCH 430**Prerequisites:** ARCH 311, 332, 333, 360. Parallel: ARCH 411.

**Description:** Integrative study of structural, building technology, and environmental technology systems in a building within the context of ARCH 411. Emphasis on the role structural, mechanical systems, and assemblages play in the evolution of an architectural design project. Students illustrate an understanding of the principles which underlie each of the technical systems and demonstrate the ability to apply those principles to the design project.

**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**ARCH 440 Details****Crosslisted with:** ARCH 540, ARCH 840**Prerequisites:** ARCH 341

**Description:** Focused study of architectural theory and problems of practice and physicality examined in the context of the architectural detail.

**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**ARCH 443 Architectural Representations: Theory + Application****Crosslisted with:** ARCH 543, ARCH 843**Prerequisites:** ARCH 311

**Description:** Explores architectural practice relative to representational communication both internally within the design process as well as with an external audience. This course also investigates the impact of tangential techniques appropriated to the practice. Readings, discussions, and projects will focus on issues of perception and projection relative to these systems and how they impact the practice of architecture in a contemporary context. Course structure is both a theory seminar addressing the position of representation through readings, as well as a laboratory for investigating their application.

**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**ARCH 458 The Changing Workplace****Crosslisted with:** ARCH 558, ARCH 858, IDES 458, IDES 858

**Description:** Survey and integration of theory, methods, research and findings from the social, behavioral, and managerial sciences as they relate to the design of work environments. Factors effecting change in the contemporary workplace.

**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**ARCH 461 Urbanism****Crosslisted with:** LARC 461, ARCH 561, ARCH 861**Prerequisites:** ARCH 360 or permission.**Notes:** Letter grade only.

**Description:** Issues of contemporary urbanism and the processes of urban design. Experiential nature of cities, role of public policy, ideology, genesis and development of urban form and space.

**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**Prerequisite for:** ARCH 562, LARC 462**ARCH 466 Community Design Center****Crosslisted with:** ARCH 566, ARCH 866**Prerequisites:** Permission.

**Description:** Community-oriented design studio. The design process and its relationship to the environmental development process.

**Credit Hours:** 1-6**Min credits per semester:** 1**Max credits per semester:** 6**Max credits per degree:** 6**Grading Option:** Graded**ARCH 467 Planting Design****Crosslisted with:** ARCH 567, ARCH 867, LARC 467, PLAS 467

**Description:** Processes, principles, and elements using plant materials as a key component of landscapes designed for human intent. Focus is on a systems approach, combining environmental attributes with functional needs to create aesthetic, functional, and sustainable landscapes for parks, commercial property, and residences using a combination of site visits and online resources.

**Credit Hours:** 4**Max credits per semester:** 4**Max credits per degree:** 4**Grading Option:** Graded with Option**Offered:** FALL**Course and Laboratory Fee:** \$25

### ARCH 469 Ecological Landscape Design

**Crosslisted with:** PLAS 469

**Prerequisites:** Permission

**Description:** Integration of ecological and environmental assessment, design process and management considerations to create detailed landscape plans for public, private, and commercial clients. Includes dream landscape project. Individuals and collaborative teams will develop concepts and details, conduct client meetings and studio critiques, and communicate graphically and verbally through presentations.

**Credit Hours:** 4

**Max credits per semester:** 4

**Max credits per degree:** 4

**Grading Option:** Graded with Option

**Offered:** SPRING

**ACE:** ACE 10 Integrated Product

**Course and Laboratory Fee:** \$25

### ARCH 481 Women in Design

**Crosslisted with:** ARCH 581, ARCH 881, IDES 481

**Prerequisites:** Admission to the BSD program.

**Description:** Intensive study of particular historical and contemporary contributions by women to the design professions related to the built environment. Evaluation of design work by and about women seen in their aesthetic and intellectual context. Examinations of the roles and values of women in design and their impact on the assumptions and issues currently held by the profession.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

### ARCH 489 Design Research

**Crosslisted with:** ARCH 589, ARCH 889, IDES 489, IDES 889, LARC 489

**Prerequisites:** Admission to a professional program in the College of Architecture.

**Description:** Comprehensive overview of the complementary and contributory relationship between research and design, with a particular emphasis on design research as a projective activity.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Offered:** FALL

### ARCH 491 Seminar in Architecture

**Prerequisites:** Permission

**Description:** Selective studies of contemporary problems in design and practice.

**Credit Hours:** 2-3

**Min credits per semester:** 2

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded with Option

### ARCH 492 Selected Topics in Architecture

**Crosslisted with:** ARCH 492H, ARCH 592, ARCH 692, ARCH 892

**Prerequisites:** Permission.

**Description:** Group investigation of a topic in architecture originated by the instructor.

**Credit Hours:** 1-6

**Min credits per semester:** 1

**Max credits per semester:** 6

**Max credits per degree:** 24

**Grading Option:** Graded

### ARCH 492H Selected Topics in Architecture

**Crosslisted with:** ARCH 492, ARCH 592, ARCH 692, ARCH 892

**Prerequisites:** Permission.

**Description:** Group investigation of a topic in architecture originated by the instructor.

**Credit Hours:** 1-6

**Min credits per semester:** 1

**Max credits per semester:** 6

**Max credits per degree:** 24

**Grading Option:** Graded

### ARCH 496 Problems in Architecture

**Crosslisted with:** ARCH 496H, ARCH 596, ARCH 896

**Prerequisites:** Permission.

**Description:** Individual investigation of a topic in architecture.

**Credit Hours:** 1-6

**Min credits per semester:** 1

**Max credits per semester:** 6

**Max credits per degree:** 9

**Grading Option:** Graded

### ARCH 496H Problems in Architecture

**Crosslisted with:** ARCH 496, ARCH 596, ARCH 896

**Prerequisites:** Permission.

**Description:** Individual investigation of a topic in architecture.

**Credit Hours:** 1-6

**Min credits per semester:** 1

**Max credits per semester:** 6

**Max credits per degree:** 9

**Grading Option:** Graded