

# ARCHITECTURE

Architecture & Environmental Design Bldg. (05), Rm 212  
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<https://architecture.calpoly.edu>

Department Head: Margot McDonald  
 Associate Department Head: Robert Arens

## Academic Programs

Program name	Program type
Architecture	BArch, MS

The objective of the five-year Bachelor of Architecture degree program is to develop design and related skills necessary for entry into the professional field of architecture. Preparation for architecture spans several disciplines and requires a range of aptitudes. As the architect has a responsibility for solving problems of the built environment involving people, an understanding and sensitivity to human needs is required. Therefore, programs in architecture are broad in nature. With careful selection of elective work, focus areas can be included.

The Bachelor of Architecture degree is accredited by the National Architectural Accrediting Board.

### Statement on NAAB Accredited Degrees

In the United States, most registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture (B.Arch), the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may require a preprofessional undergraduate degree in architecture for admission. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

California Polytechnic State University, Architecture Department, offers the following NAAB-accredited degree program:

B.Arch. (225 undergraduate credits)

Next accreditation visit for program: 2017

### Transfer Students

Transfer applicants into Architecture are ranked by Admissions in accordance to the formula outlined on the Admissions Web Site. The Architecture Department then invites the top ranked candidates to submit a portfolio of their work for final selection by the Architecture Department faculty.

### Laptop Requirement

The department has a requirement that all freshmen or transfer students have a notebook computer when they enter the program. In the profession of architecture, computing is an integral component, and developing the ability to critically integrate hand and digital tools is a fundamental aspect of architectural education. A notebook

computer is the key to having computing capabilities available at all times and all locations. Financial aid may be available to cover the cost of the notebook computer (contact the Financial Aid Office (<http://financialaid.calpoly.edu>) for more information).

### Off-Campus Architecture Programs

Off-campus study opportunities for fourth year Architecture students are offered in a variety of formats and locations. Programs from one quarter to a full year are available abroad and in the United States. There is a third year student general information session each fall quarter to present the department-sponsored programs offered for the following year. Applications from third year students for all programs are due in the winter quarter.

### CSU International Programs

There are two CSU-sponsored organized studio programs for Architecture majors, one in Copenhagen, Denmark, and one in Florence, Italy. The concept of the studio organization is similar to Cal Poly. Credit for major design courses, some professional electives, some general education courses and free electives are handled through approved overseas study centers.

### San Francisco Urban Design / LA Metro Programs

Two Urban Design/Internship Programs offer fourth year students the opportunity to live and study in San Francisco or Los Angeles for two quarters (winter and spring). Each class utilizes projects with the participation of talented, award-winning architectural offices and urban designers to introduce students to urban design and architectural practice.

### Washington Alexandria Architecture Consortium

The Consortium, comprised of several universities including Cal Poly, is organized to offer a challenging and stimulating one-year option. The Center functions as an extension of the College of Architecture of Virginia Polytechnic Institute and State University (VPI) in the Washington DC Metropolitan Area. The Consortium seeks to explore and expand design pedagogues and processes and establish collaboration with national and international institutions.

### Other Programs

The Architecture Department offers a changing variety of off-campus programs throughout the world. Contact the Architecture Department for current information.

### Cooperative Education (Co-op)

In addition to traditional classroom study experiences and instructor-led field trips, students have the opportunity to work for professional architecture firms and receive professional elective credits. To find out more about Cooperative Education opportunities, visit the Architecture Department or Career Services. Applications and opportunities for Co-op credit are available year-round.

## Undergraduate Program Bachelor of Architecture

The objective of the five-year Bachelor of Architecture degree program is to develop design and related skills necessary for entry into the professional field of architecture.

## Graduate Program

Graduate Coordinator: Thomas Fowler

## Master of Science in Architecture

The Master of Science in Architecture (MS ARCH) degree has a research focus that provides an opportunity for specialization. The MS ARCH Program prepares graduates for specialist and consultation positions in the broad field of Environmental Design within the Architecture, Engineering and Construction (AEC) industry. Graduates with a Bachelor of Architecture degree are welcomed to apply to focus on a post professional area of specialization. Graduates who hold a degree outside of architecture are also welcome to apply.

The MS ARCH Degree is not a professional degree in architecture. If you need more information on the educational requirements for licensure for the field of architecture see: NCARB.org (<http://www.ncarb.org>), NAAB.org (<http://naab.org/home>) and ACSA-arch.org (<http://www.acsa-arch.org>).

### Curriculum Overview

The MS ARCH is a degree with a master's research project (thesis or project) as the principal component. 45 total units are required for completion of the degree. A master's proposal is prepared by each student, based upon their research interests formulated during the first year of the program.

### Professional Practice Focus

Designed for applicants holding an accredited architecture degree wishing to pursue advanced studies with a strong professional practice orientation.

### Environmental Design Focus

Designed for applicants holding a degree in one of the several cognate environmental design disciplines, engineering, or computer science, wishing to pursue advanced studies with a strong inter-professional orientation in the field of environmental design, with special reference to its three primary contributory disciplines of Architecture, City and Regional Planning, and Landscape Architecture. The common core curriculum aims to establish a central focus for advanced study and research, while sub-core studies and directed electives provide for in-depth study in one of the contributory disciplines of Architecture, City and Regional Planning, Architectural Engineering, Landscape Architecture and Construction Management.

### Graduate Study Areas

Each of these areas listed below encompasses a wide range of potential study topics that may be selected for in-depth research subject to the interests and desires of the individual graduate student. However, regardless of the selected research topic students are expected to be knowledgeable of fundamental building science principles, and advanced information technology concepts. Graduate students are encouraged to build on the knowledge that they have gained from their previous academic studies and/or professional experience, as they acquire and contribute new knowledge in their chosen research specialization within one of the following broadly defined research areas.

- *Innovative Materials Practice*: This practice specialization focuses on design integration through innovations in materials and material assemblies enabled by contemporary modes of digital fabrication and their impact on design and the construction process. Associated with the Digital Fabrication Laboratory, physical prototyping and material testing are integrated into the course of study and research. In addition, sustainable practices in digital fabrication from material economies to cradle-to-cradle methodologies as well as responsive envelopes are of particular interest. This study area promotes interdisciplinary work as essential to innovation in design

and construction with connections to other disciplines including: Architectural Engineering, Construction Management, Material Engineering, and Mechanical Engineering. Study and research areas include but are not limited to: parametric design and fabrication of material systems, prefabrication, responsive envelopes, and material performance.

- *Sustainability and Resilient Design*: Study of the built environment as a low impact necessary enhancement of the natural environment in the service of humankind, including: renewable energy systems; waste recycling; energy conservation concepts and practices; self-contained biospheres; materials of construction and embodied energy considerations; green buildings; and, unhealthy building environment.

## ARCH Courses

### ARCH 101. Survey of Architectural Education and Practice. 1 unit

CR/NC

Term Typically Offered: F, W, SP

Exploration of the major paradigms which have guided the development of architectural education and the profession. Survey of the roles of the architects and an introduction to curricula and programs designed to prepare students for careers in architecture. Credit/No Credit grading only. 1 lecture. Total credit limited to 3 units.

### ARCH 106. Materials of Construction. 2 units

Term Typically Offered: TBD

Use and application of construction processes and materials. 2 lectures.

### ARCH 131. Design and Visual Communication 1.1. 4 units

Term Typically Offered: F

Prerequisite: Architecture or Architectural Engineering majors only.

An introduction to the issues, concepts, processes and skills pertaining to two- and three-dimensional design and the freehand, constructed and digital representation and visual communication of ideas, objects and environments. Purchase of a laptop computer, software and peripherals is highly recommended to participate in this course. 4 laboratories.

### ARCH 132. Design and Visual Communication 1.2. 4 units

Term Typically Offered: W

Prerequisite: ARCH 131.

Continuation of ARCH 131 plus the issues, concepts, processes and skills pertaining to color theory and the design and visual communication of architectural space. Purchase of a laptop computer, software and peripherals is highly recommended to participate in this course. 4 laboratories.

### ARCH 133. Design and Visual Communication 1.3. 4 units

Term Typically Offered: SP

Prerequisite: ARCH 132.

Continuation of ARCH 131 and ARCH 132 plus the issues, concepts, processes and skills pertaining to the analysis and design of architectural form, space and organizations. Purchase of a laptop computer, software and peripherals is highly recommended to participate in this course. 4 laboratories.

### ARCH 204. Architectural Theory. 3 units

Term Typically Offered: TBD

Prerequisite: EDES 101 or EDES 123.

Theories of architectural design. 3 lectures.

**ARCH 207. Architectural Technology Fundamentals 2.3. 4 units**

Term Typically Offered: SP

Prerequisite: ARCH 242. Concurrent: ARCH 253.

Theory and application of climate, energy use and comfort as determinants of architectural form in small-scale buildings. Emphasis on architectural methods of ventilating, cooling, heating, and lighting for envelope-load dominated buildings. 2 lectures, 2 activities.

**ARCH 217. History of World Architecture: Prehistory - Middle Ages. 4 units**

GE Area C3

Term Typically Offered: F

Architecture and urbanism in the ancient world, from prehistory to the Middle Ages. Social, cultural and physical conditions that influenced the built environment to the Mediterranean basin, plus Europe, Asia, Africa and Pre-Columbian America. 4 lectures. Fulfills GE C3.

**ARCH 218. History of World Architecture: Middle Ages - 18th Century. 4 units**

GE Area C3

Term Typically Offered: W

World architecture and urbanism from the Middle Ages until the end of the 18th century Baroque. Social, cultural and physical conditions which influenced the built environment of Europe, Asia, and the Pre-Columbian and Colonial Americas. 4 lectures. Fulfills GE C3.

**ARCH 219. History of World Architecture: 18th Century - Present. 4 units**

GE Area C3

Term Typically Offered: SP, SU

Architecture and urbanism of the modern world, from the 18th century to the present. Social, cultural and physical conditions influencing the built environment of Europe, Asia, Africa and the Americas. 4 lectures. Fulfills GE C3.

**ARCH 241. Architectural Technology Fundamentals 2.1. 4 units**

Term Typically Offered: F

Prerequisite: ARCH 133. Corequisite: ARCH 251.

The language, principles and materials of construction with an emphasis on the origin, history, and application of traditional and emergent materials. 2 lectures, 2 activities.

**ARCH 242. Architectural Technology Fundamentals 2.2. 4 units**

Term Typically Offered: W

Prerequisite: ARCH 241. Corequisite: ARCH 252.

A continuation of ARCH 241 with an emphasis on the fundamental aspects of construction systems and the basics of construction documentation. 2 lectures, 2 activities.

**ARCH 251. Architectural Design 2.1. 5 units**

Term Typically Offered: F

Prerequisite: ARCH 133. Corequisite: ARCH 241.

Continuation of ARCH 133 in terms of materiality and the theories, concepts, processes and skills pertaining to the analysis and design of architectural form, space and organizations to communicate intended concepts and meanings. 5 laboratories.

**ARCH 252. Architectural Design 2.2. 5 units**

Term Typically Offered: W

Prerequisite: ARCH 251, ARCH 241. Corequisite: ARCH 242.

Continuation of ARCH 251 plus the theories, concepts, processes and skills pertaining to light, construction and function as determinants that shape the built environment and support the communication of intended concepts and meanings. 5 laboratories.

**ARCH 253. Architectural Design 2.3. 5 units**

Term Typically Offered: SP

Prerequisite: ARCH 252 and ARCH 242. Corequisite: ARCH 207.

Continuation of ARCH 251 and ARCH 252 plus the theories, concepts, processes and skills pertaining to context, structure and climate as determinants that shape the built environment and support the communication of intended concepts and meanings. 5 laboratories.

**ARCH 270. Selected Topics. 1-4 units**

Term Typically Offered: TBD

Directed group study of selected topics. The Schedule of Classes will list title selected. Open to first-, second-, third-year students. Total credit limited to 8 units. 1 to 4 lectures.

**ARCH 302. Theories of Architectural Design. 3 units**

Term Typically Offered: TBD

Prerequisite: ARCH 253.

Theories of architecture and their application in architectural design. 3 lectures.

**ARCH 307. Architectural Systems Integration 3.2. 4 units**

Term Typically Offered: W

Prerequisite: ARCH 341. Concurrent: ARCH 352.

Continuation of ARCH 341 plus theory and application of climate, energy use and comfort as determinants of architectural form in large-scale buildings. Emphasis on architectural and mechanical methods of ventilating, cooling, heating, lighting, acoustics, and water and waste systems for internal-load dominated buildings. 2 lectures, 2 discussions.

**ARCH 313. Advanced Delineation. 2 units**

Term Typically Offered: SP

Prerequisite: ARCH 253.

Development of proficiency in architectural presentation. Projects and critiques. 2 laboratories.

**ARCH 320. Topics in Architectural History. 4 units**

GE Area C4

Term Typically Offered: TBD

Prerequisite: Junior standing; GE Area A1 and one of the following Area C3 courses: ARCH 217, 218, 219, or ART 112.

In-depth examination of a significant region, movement or period in architectural history, theory and criticism. The material covered will vary depending upon the topic. The Schedule of Classes will list topic selected. Total credit limited to 8 units. 4 lectures. Fulfills GE C4 except for Architecture majors.

**ARCH 326. Native American Architecture and Place. 4 units**

GE Area C4; USCP

Term Typically Offered: TBD

Prerequisite: Junior standing; completion of GE Areas A and C1.

The role of culture and setting in the construction of spatial, material and landscape concepts and artifacts, through the introduction of selected North American cultures, with focus from 1300 AD through contemporary time. 4 lectures. Crosslisted as ARCH/ES 326. Fulfills GE C4. Fulfills USCP.

**ARCH 341. Architectural Systems Integration 3.1. 4 units**

Term Typically Offered: F

Prerequisite: ARCH 207 and ARCH 253. Corequisite: ARCH 351.

Continuation of ARCH 207 plus the concepts, methods and processes and building systems that pertain to the detailing and construction of large-scale masonry, steel, concrete and combination structures. 2 lectures, 2 discussions.

**ARCH 342. Architectural Systems Integration 3.3. 4 units**

Term Typically Offered: SP

Prerequisite: ARCH 307. Concurrent: ARCH 353.

Continuation of ARCH 307 plus the concepts, methods, and processes pertaining to the preparation of outline specifications, production of design development drawings, life safety, building systems integration and building envelope and fabrication systems that inform the design and development of large scale buildings. 2 lectures, 2 discussions.

**ARCH 351. Architectural Design 3.1. 5 units**

Term Typically Offered: F

Prerequisite: ARCE 212, ARCH 253, ARCH 207 and PHYS 122 or PHYS 132, or consent of department head. Corequisite: ARCH 341.

Continuation of ARCH 253 plus the development and exploration of architectural theories, building systems, and design concepts and processes involved in creating architecture with an emphasis on implications of the program and space planning issues as building form generator. 1 lecture, 4 laboratories.

**ARCH 352. Architectural Design 3.2. 5 units**

Term Typically Offered: W

Prerequisite: ARCH 351, ARCH 341. Corequisite: ARCH 307.

Continuation of ARCH 351 plus the development and exploration of architectural theories, building systems, and design concepts and processes involved in creating sustainable architecture with an emphasis on implications of ecological, environmental and site issues as building form generator. 1 lecture, 4 laboratories.

**ARCH 353. Architectural Design 3.3. 5 units**

Term Typically Offered: SP

Prerequisite: ARCH 352, ARCH 307. Corequisite: ARCH 342.

Continuation of ARCH 352 plus the development and exploration of architectural theories, building systems, and design concepts and processes involved in creating large-scale architecture with an emphasis on implications of socio-cultural and comprehensive/life safety systems integration issues as building form generator. 1 lecture, 4 laboratories.

**ARCH 363. Off-Campus Orientation Seminar. 2 units**

CR/NC

Term Typically Offered: SP

Prerequisite: Consent of instructor.

Preparation for off-campus architectural study programs includes cultural orientation, an introduction to basic language skills, travel and housing protocols as well as academic and financial advising. Credit/No Credit grading only. Total credit limited to 4 units, with a maximum of 2 units per quarter. 2 seminars.

**ARCH 400. Special Problems for Advanced Undergraduates. 1-2 units**

CR/NC

Term Typically Offered: F,W,SP,SU

Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of selected problems. Total credit limited to 4 units, with a maximum of 2 units per quarter. Credit/No Credit grading only.

**ARCH 420. Seminar in Architectural History, Theory and Criticism. 4 units**

Term Typically Offered: F, W, SP

Prerequisite: ARCH 217, ARCH 218, and ARCH 219.

Special topics based on the exploration of specific approaches, periods of time, and cultural or geographic areas. The Schedule of Classes will list topic selected. Total credit limited to 12 units; repeatable in same term. 4 seminars.

**ARCH 443. Issues in Contemporary Professional Practice. 4 units**

Term Typically Offered: W

Prerequisite: ARCH 342, ARCH 353.

An exploration of topics related to the practice of architecture, including financial considerations, client obligations, project and practice management, leadership, legal responsibilities, ethics and professional judgment, and community and social responsibility, as well as the process and requirements for internship and licensure. 2 lectures, 2 discussions.

**ARCH 445. Urban Design in Architecture. 3 units**

Term Typically Offered: TBD

Prerequisite: Completion of GE Area A1.

Design role of the urban architect. Economic, environmental and technological forces impacting on architectural practice in urban areas. 3 lectures.

**ARCH 451. Architectural Design 4.1. 5 units**

Term Typically Offered: F

Prerequisite: ARCE 316, ARCH 353, ARCH 342.

Problems of increasing architectural complexity involving the comprehensive integration of architectural theory, design processes, and building systems with emphasis placed on multifunction singular buildings. 5 laboratories.

**ARCH 452. Architectural Design 4.2. 5 units**

Term Typically Offered: W

Prerequisite: ARCE 316, ARCH 353, ARCH 342.

Problems of increasing architectural complexity involving the comprehensive integration of architectural theory, design processes, and building systems with emphasis placed on multibuilding, multifunctional projects. 5 laboratories.

**ARCH 453. Architectural Design 4.3. 5 units**

Term Typically Offered: SP

Prerequisite: ARCE 316, ARCH 353, ARCH 342.

Problems of increasing architectural complexity involving the comprehensive integration of architectural theory, design processes, and building systems with emphasis placed on multifunctional projects in an urban context. Total credit limited to 10 units and may substitute for ARCH 451 or ARCH 452. 5 laboratories.

**ARCH 460. Computer Graphics Applications III. 3 units**

Term Typically Offered: TBD

Prerequisite: ARCH 133 or ARCH 160 or consent of instructor.

Advanced methods in the application of computer graphics and multi-media techniques in architectural design. 2 lectures, 1 activity.

**ARCH 461. Advanced Computer-Aided Fabrication in Architecture. 4 units**

Term Typically Offered: TBD

Prerequisite: Junior standing.

Applications of computer-aided manufacturing in architectural design with emphasis on subtractive and additive fabrication methods, material assemblies, and advanced techniques in digital design software. 2 lectures, 2 activities.

**ARCH 462. Topics in Architectural Practice. 3-4 units**

Term Typically Offered: W

Prerequisite: ARCH 342.

Selected topics addressing various aspects of Architectural Practice for advanced students in CAED. Topics may include strategic planning, managing quality, ethics, and legal considerations. Open to undergraduate and graduate students. The Schedule of Classes will list topic selected. Total credit limited to 8 units; repeatable in same term. 3-4 lectures.

**ARCH 464. Computer Applications in Design. 3 units**

Term Typically Offered: TBD

Prerequisite: Junior standing.

Exposure to aspects of computer-aided design. Class Schedule will list topic selected. Total credit limited to 12 units. 3 lectures.

**ARCH 465. Design Related Media. 3 units**

Term Typically Offered: TBD

Prerequisite: Junior standing and current participation in Washington Alexandria Architectural Consortium off-campus program.

The role of various media of visual communication as tools of documentation, analysis and creation in the design visual environment. Skills in graphics, photography, product design, film, video techniques, and printmaking graphics will be developed in specific relation to environmental design study and presentation. Class Schedule will list topic selected. Total credit limited to 12 units. 3 lectures.

**ARCH 466. Topics in Architectural History and Theory. 3 units**

Term Typically Offered: TBD

Prerequisite: Junior standing and current participation in Washington Alexandria Architectural Consortium off-campus program.

Design from its beginning with the crafts design period to its expression of industrial design in its present form. Various stages in the evolution of design explored through analyzing the influences and contributions of leading artists. Class Schedule will list topic selected. Total credit limited to 12 units. 3 lectures.

**ARCH 467. Undergraduate Research. 3 units**

Term Typically Offered: TBD

Prerequisite: Junior standing and current participation in Washington Alexandria Architectural Consortium off-campus program.

Architecture and urban theoretical intentions and results in the context of the Capitol of the United States - Washington, DC. This theoretical and historical study will not occur within the confines of the classroom, but directly within the 'laboratory' of the city. Class Schedule will list topic selected. Total credit limited to 12 units. 3 lectures.

**ARCH 468. Advanced Environmental Building Systems. 3 units**

Term Typically Offered: TBD

Prerequisite: Junior standing and current participation in Washington Alexandria Consortium off-campus program.

Technologies which provide a 'well building' environment by engaging in: weather protection; thermal/moisture control; natural and artificial lighting; and electrical and other 'energy source' utility service. 3 lectures.

**ARCH 469. Topics in Design Methods. 3 units**

Term Typically Offered: TBD

Prerequisite: Junior standing and current participation in the Washington Alexandria Architectural Consortium off-campus program.

Relationship of art and architecture addressed to encourage critical debate. Historically, the 'art' and the 'architecture' were not as polarized as today. Both historical perspective and practical issues concerning collaboration. Class Schedule will list topic selected. Total credit limited to 12 units. 3 lectures.

**ARCH 470. Selected Advanced Topics. 1-4 units**

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group study of selected topics for advanced students. The Schedule of Classes will list title selected. Total credit limited to 16 units. 1 to 4 lectures.

**ARCH 471. Selected Advanced Laboratory. 1-4 units**

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 laboratories.



**ARCH 472. Housing Design Concepts. 3-4 units**

Term Typically Offered: TBD

Prerequisite: Third-year standing.

For students preparing for further study or practice relating to housing, urban design and new communities. This course will address design objectives, concepts, and current theories and forms in housing and mixed-use projects. 3-4 lectures.

**ARCH 473. Material Innovation Lab. 4 units**

Term Typically Offered: F, SP

Prerequisite: ARCH 461.

Applied research through the design and fabrication of full-scale building assemblies, using computer-aided manufacturing. Material properties, methods of manufacturing, and building performance. Total credit limited to 12 units. 2 lectures, 2 activities.

**ARCH 480. Special Studies in Architecture. 1-12 units**

Term Typically Offered: F,W,SP,SU

Prerequisite: Junior standing.

Special issues and problems through research, field trips, design projects, and other forms of investigation and involvement. Course requirements are determined prior to each individual project through a contractual agreement between students and department. The departmental Off Campus Study Guidelines apply except when superseded by guidelines and practices of the London Study Program of the College of Liberal Arts. Total credit limited to 36 units.

**ARCH 481. Senior Architectural Design Project. 5 units**

Term Typically Offered: F, W, SP

Prerequisite: ARCH 451, ARCH 452 and ARCH 453.

Comprehensive building design and research project in an architectural concentration area. Demonstration of professional competency in integration of architectural theory, principles and practice with creative, organizational and technical abilities in architectural programming, design and design research. Total credit limited to 15 units. 5 laboratories.

**ARCH 485. Internship/Cooperative Education Experience. 1-12 units**

Term Typically Offered: F,W,SP,SU

Prerequisite: Senior standing.

Part-time or full-time professional work experience in architecture and related fields, usually off-campus. Positions are paid or unpaid. Formal report and evaluation by work supervisor required. 30 hours of work experience per quarter per unit of credit. Total credit limited to 24 units.

**ARCH 492. Senior Design Thesis. 3 units**

Term Typically Offered: F

Prerequisite: ARCH 451, ARCH 452 and ARCH 453. Concurrent: First quarter of ARCH 481.

Development of the framework and format of a thesis project proposal related to the specific design option. Work to include: research topic, intent, scope, methodology, assumptions, outline of work program and documentation. 3 seminars.

**ARCH 510. Environmental Design Methods. 3 units**

Term Typically Offered: TBD

Prerequisite: Graduate standing.

Application of systematic, step-by-step procedures to rational and intuitive judgmental tasks. Methods for formulation, idea production, evaluation, and testing applied to planning, testing, design information systems, communication between designer and client, user participation in design, and other current topics. 511 focuses on specific problem area among topics and may be repeated up to 9 units. 3 lectures.

**ARCH 532. Research Methods in Architecture. 3 units**

Term Typically Offered: TBD

Prerequisite: Graduate standing.

Roles of research and analysis in architecture. Approaches to research, hypothesis testing, design process, and systems for design. Use of research findings in various decision-making systems. 3 seminars.

**ARCH 551. Architectural Design. 5 units**

Term Typically Offered: F, W, SP

Prerequisite: Graduate standing.

Professional initiative and responsibility in integrating architectural design theory and practice with fields influencing the total environment. Building types considered as the coordinating factor. Total credit limited to 15 units with no more than 5 units in any one quarter. 5 laboratories.

**ARCH 561. Advanced Design. 3 units**

Term Typically Offered: F, W

Prerequisite: Graduate standing.

Continuation of ARCH 551. Advanced studies integrating architectural design theory and practice with fields influencing the shaping of the total environment. Total credit limited to 9 units. 3 laboratories.

**ARCH 570. Selected Advanced Topics. 1-4 units**

Term Typically Offered: TBD

Prerequisite: Graduate standing or consent of instructor.

Directed group study of selected topics for graduate students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1-4 lectures.

**ARCH 580. Seminar in Theory of Architecture. 3 units**

Term Typically Offered: TBD

Prerequisite: Graduate standing.

Directed group study of selected topics in the theory of architecture for graduate students. The Schedule of Classes will list topic selected. Total credit limited to 9 units. 3 seminars.

**ARCH 598. Master's Design Project. 3-6 units**

Term Typically Offered: F, W, SP

Prerequisite: Consent of graduate advisor.

Completion of a master project demonstrating in-depth research ability at a graduate level. Total credit limited to 9 units. 3 or 6 laboratories.

**ARCH 599. Master's Thesis. 1-9 units**

Term Typically Offered: TBD

Prerequisite: Consent of graduate advisor.

Completion of a thesis embodying original research in an area of environmental design. Total credit limited to 9 units.