

Architecture (ARCH) | Cal Poly Academic Catalog

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

Term Typically Offered: F, W, SP

CR/NC

Sustainability Related

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 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. 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. 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. 4 laboratories.

ARCH 201. Architecture Design Studio for Non-Majors. 4 units

Term Typically Offered: F, W, SP

2020-21 or later catalog: GE Area C1

2019-20 or earlier catalog: GE Area C3

Introduction to processes, tools, and methods of drawing and modeling for architectural design.

Analysis of architectural case studies to provide an overview of architectural concepts and constructs. Studio experience includes architectural design projects at varying scales. Not open for major credit in Architecture. Course may be offered in classroom-based or online format. 3 lectures, 1 laboratory. Fulfills GE Area C1 (GE Area C3 for students on the 2019-20 or earlier catalogs).

ARCH 207. Architectural Technology Fundamentals 2.3. 4 units

Term Typically Offered: SP

Sustainability Focused

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. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 2 activities.

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

Term Typically Offered: F

2020-21 or later catalog: GE Area C1

2019-20 or earlier catalog: GE Area C3

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. Course may be offered in classroom-based or online format. 4 lectures. Fulfills GE Area C1 (GE Area C3 for students on the 2019-20 or earlier catalogs).

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

Term Typically Offered: W

2020-21 or later catalog: GE Area C1

2019-20 or earlier catalog: GE Area C3

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. Course may be offered in classroom-based or online format. 4 lectures. Fulfills GE Area C1 (GE Area C3 for students on the 2019-20 or earlier catalogs).

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

Term Typically Offered: SP

2020-21 or later catalog: GE Area C1

2019-20 or earlier catalog: GE Area C3

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. Course may be offered classroom-based or online format. 4 lectures. Fulfills GE Area C1 (GE Area C3 for students on the 2019-20 or earlier catalogs).

ARCH 241. Architectural Technology Fundamentals 2.1. 4 units

Term Typically Offered: F

Sustainability Related

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. Field trip required. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 2 activities.

ARCH 242. Architectural Technology Fundamentals 2.2. 4 units

A continuation of [ARCH 241](#) with an emphasis on the fundamental aspects of construction systems and the basics of construction documentation. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 2 activities.

ARCH 251. Architectural Design 2.1. 5 units

Term Typically Offered: F

Sustainability Related

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

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

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 Class Schedule will list topic selected. Open to first-, second-, third-year students. Total credit limited to 8 units. 1 to 4 lectures.

ARCH 307. Architectural Systems Integration 3.2. 4 units

Term Typically Offered: W

Sustainability Focused

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. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 2 discussions.

ARCH 313. Advanced Delineation. 4 units

Term Typically Offered: SP

Prerequisite: [ARCH 253](#).

Development of proficiency in architectural presentation. Projects and critiques. 4 seminars.

ARCH 320. Topics in Architectural History. 4 units

Term Typically Offered: TBD

2020-21 or later: Upper-Div GE Area C

2019-20 or earlier catalog: GE Area C4

Prerequisite: Junior standing; completion of GE Area A with grades of C- or better; one course in GE Area B4 with a grade of C- or better (GE Area B1 for students on the 2019-20 or earlier catalogs); and one of the following: [ARCH 217](#), [ARCH 218](#), [ARCH 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 Class Schedule will list topic selected. Total credit limited to 8 units. Course may be offered in classroom-based, online, or hybrid format. 4 lectures. Fulfills GE Upper-Division C (GE Area C4 for students on the 2019-20 or earlier catalogs).

ARCH 326. Native American Architecture and Place. 4 units

Term Typically Offered: W

2020-21 or later: Upper-Div GE Area C

2019-20 or earlier catalog: GE Area C4

USCP

Prerequisite: Junior standing; completion of GE Area A with grades of C- or better; one course in GE Area B4 with a grade of C- or better (GE Area B1 for students on the 2019-20 or earlier catalogs); and one lower-division course in GE Area C.

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 Upper-Division C (GE Area C4 for students on the 2019-20 or earlier catalogs); and USCP.

ARCH 341. Architectural Systems Integration 3.1. 4 units

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. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 2 discussions.

ARCH 342. Architectural Systems Integration 3.3. 4 units

Term Typically Offered: SP

Sustainability Related

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. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 2 discussions.

ARCH 351. Architectural Design 3.1. 5 units

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

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

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 issues and comprehensive/life safety systems integration as building form generator. 1 lecture, 4 laboratories.

ARCH 363. Off-Campus Orientation Seminar. 2 units

Term Typically Offered: SP

CR/NC

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

Term Typically Offered: F,W,SP,SU

CR/NC

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

Special topics based on the exploration of specific approaches, periods of time, and cultural or geographic areas. The Class Schedule will list topic selected. Total credit limited to 12 units; repeatable in same term. Course may be offered in classroom-based, online, or hybrid format. 4 seminars.

ARCH 443. Issues in Contemporary Professional Practice. 4 units

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, 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 A2 with a grade of C- or better (GE Area A1 for students on the 2019-20 or earlier catalogs).

Analysis of the roles of architects and related professionals in urban areas. Emphasis on design reactions to environmental, economic, and technological conditions. Total credit limited to 12 units. 3 lectures.

ARCH 451. Architectural Design 4.1. 5 units

Term Typically Offered: F

Sustainability Focused

Prerequisite: [ARCH 353](#) and [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

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

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 Applications. 3 units

Term Typically Offered: TBD

Prerequisite: [ARCH 133](#).

Advanced methods in the application of computer graphics and multi-media techniques in architectural design. Total credit limited to 6 units. 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: TBD

Prerequisite: [ARCH 242](#).

Selected advanced topics addressing various aspects of Architectural Practice. Open to undergraduate and graduate students. The Class Schedule will list topic selected. Total credit limited to 12 units; repeatable in same term. 3 to 4 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 Class Schedule will list topic 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. The 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

Sustainability Focused

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: TBD

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 479. Design Build. 4 units

Term Typically Offered: TBD

Prerequisite: Third-year standing.

Experimental design-build projects derived from real-world architectural problems. Objectives achieved through design, analysis, construction, and team-based production. The Class Schedule will list topic selected. 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

Advanced architectural design and research project. Integration of architectural theory, principles and practice with creative, organizational and technical abilities in architectural design and design research. Total credit limited to 15 units. 5 laboratories.

ARCH 484. Architectural Research. 2-4 units

Term Typically Offered: TBD

Prerequisite: Architecture, Architectural Engineering, City and Regional Planning, Construction Management, and Landscape Architecture majors only; and consent of instructor.

Development of guided architectural research under the direction of faculty. The Class Schedule will list topic selected. Total credit limited to 8 units, repeatable in the same term. 2 to 4 seminars.

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

Review and research of architectural theory and precedents related to the specific design option. Development of a thesis and a design project proposal. 3 seminars.

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, SP

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 Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 lectures.

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.