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<th><strong>Meaning of the Degree</strong></th>
<th><strong>Cal Poly Pomona Bachelor of Architecture (B.Arch)</strong></th>
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<td>This section is about the structure of the degree, its components and its expectations.</td>
<td>The BArch program is one of only two in the CSU. There are no undergraduate professional degrees of architecture in the UC. The professional undergraduate degree is otherwise available through private institutions (e.g. USC, Woodbury.) The generic degree in Architecture prepares a student for licensure with 5 years of professional training in normative means and methods of practice, which must then be followed with a 3-year internship, and successful completion of state exams to achieve licensure. In the CPP BArch program we balance normative practices with the generative and transformational.</td>
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<td>Describe the generic degree and what makes your degree at CPP distinct.</td>
<td>In resonance with the University, CPP/ARC has a long tradition of cultivating success through a diverse collection of experiences spanning from the classroom and studio setting, to field work investigations of real places and issues. Students are also offered a variety of international architectural study opportunities. As one of the most ethnically diverse programs of architecture in the US, at CPP/ARC the culture of the program provides students with an exposure to many cultural perspectives of architecture, and paths to innovation and creative problem solving. <a href="https://env.cpp.edu/arc/arc">https://env.cpp.edu/arc/arc</a></td>
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<td>Describe how the degree aligns with the university vision, values, and outcomes.</td>
<td>CPP/ARC upholds Cal Poly core values for Academic Excellence, Experiential Learning, Student Learning and Success, Inclusive and Diverse, Community Engagement, and Social and Environmental Responsibility.</td>
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<td>Describe your entering students’ abilities and your graduates’ culminating skills.</td>
<td>At CPP/ARC half the architecture students are women, a third are Asian, more than a third are Latino. Most are first or second generation Americans. A large number of our students are the first in the family to go to college. Official statistics point to CPP/ARC being the most demographically diverse architecture program in the United States. This diversity provides an essential component of an architectural education – and the cultivation of an empathy to design and make environments for all people. Entering FTF typically have an EI well above 4000. Transfer students typically enter CPP/ARC with a GPA above 3.5. Graduates gain employment in award-winning national and international design firms, and a growing number have gained admittance to leading graduate programs, including Harvard, Columbia, UCLA, and programs in Europe and Japan. It is notable that participation in the Department’s annual job fair include 70+ firms.</td>
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| Describe the curricular and co-curricular components that you have put into place to achieve your expectations. | The CPP/ARC program balances design aspirations with the
pragmatic. Our disciplinary concerns provide students with a path to conventional architectural practice and a capacity to improve the profession. Students practice the craft of architecture in design studios, where they learn to draw and make models, and where they implement knowledge gained in technical and humanities courses in their projects. At the midpoint and end of each quarter each student presents his or her project to a panel of academics and professionals and must “defend” his or her design decisions. We believe this is unmatched by any program on campus as a model of synthesis of learning outcomes and communication skills.

In our lecture courses and studios, we guide students to look to technique, to material and structural possibilities, to digital technology and fabrication, to the principles of sustainability, to the expressive potential of architectural representation, to research and precedents, and to the pragmatic constraints of construction, in order to generate appropriate architectural responses to particular situations. Students are also asked to balance these disciplinary concerns with all manner of aesthetic and moral value judgments based on their own biases and those fostered by the faculty.

The program is built around the design studio project and experience, emulating in-part life in practice. Parallel with studio, students take lecture classes in architectural theory and history, human behavior, programming, sustainability, building technology, structures, codes and digital media are closely coordinated with the studio sequence, and students are expected to demonstrate their knowledge of these areas in their design studio projects. Students take one design studio per quarter. Studio meets 9 hours per week with an additional 2-hour lecture course that is tied to the studio. The undergraduate studio sequence consists of four segments: 1) a three-year core, 2) a three quarter topic studio sequence taken jointly by fourth and fifth year students, 3) a fourth-year urban design studio and 4) a two-quarter culminating 5th year senior project.

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<td>This section is about the alignment of the degree program with the expectations.</td>
<td>The B.Arch program is ranked as a top 5 program in the West and a top 20 program in the United States. The graduation rate for B.Arch students is 78% versus 62% for the university at large (note that this rate is calculated as the total number of completers within 150% of normal time divided by the revised cohort minus any allowable exclusions. For architecture, given that this is a 5-year degree the graduation rate is based on 7-years). CPP/ARC has the lowest “at risk” population in the university.</td>
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| Describe (don’t just list) your learning outcomes, the levels that you have set for graduates, and how they align with your expectations. | }
Describe how the curricular and co-curricular components of the program help students to meet the expectations and learning outcomes.

The high success rate of the department is likely based on:
- The program’s tight admissions requirement and high achieving student admits
- Our cohort model (students all take the same courses and progress together through the program)
- High degree of individual attention (studios meet 9-12 hours per week, which means students and faculty know each other very well)
- Very active student clubs (largest chapter of AIAS nationally, our professional student club, student mentorship by TSD, our honors club)
- Highly personalized faculty advising, quarterly chair meetings with students, and very approachable faculty.

An accomplished and motivated faculty, many with design practices, bring real professional experience directly to the learning environment. A large number of faculty serve on professional organizations locally, nationally and internationally that address environmental, urban, preservation, and technological issues. Department faculty publish books and articles, curate exhibits, organize conferences and symposiums, present at professional conferences, serve on design reviews at other institutions, and win design awards.

CPP/ARC views the department, and its unique urban setting, as a living laboratory where students and faculty can research, develop, and test social, artistic, technological, and environmental design methods and ideas.

The learning outcomes and expectations for the architecture program are based on the student performance criteria defined by the National Architectural Accrediting Board (NAAB). These are organized into four realms: 1) Critical Thinking and Representation, 2) Building Practices, Technical Skills and Knowledge, 3) Integrated Architectural Solutions, and 4) Professional Practice.

1. Critical Thinking and Representation

Communication Skills. Undergraduate writing and speaking skills are an essential part of each student’s general education, but the refinement of writing is a requirement for all history classes in the curriculum. The ability to speak is stressed through informal and formal studio presentations. Students are required to make verbal presentations each quarter for each studio. All students make a verbal public defense of their senior project.

Design Thinking Skills. Undergraduates students are required to receive, process, evaluate new information that is delivered in
lecture courses and then implement this information into their design studio projects. In lectures, they are challenged through quizzes, papers, and related exercises to form their own opinions and formulate responses to their positions.

**Visual Communication Skills.** Students get significant exposure to a range of visual skills resulting from the required minimum of 15 design studios. This is supported by specific courses focused on digital techniques. Students learn design software in a measured and gradual way and gain fundamental abilities that are integrated with the studio projects.

**Technical Documentation.** Undergraduates are required to engage in technical documentation through the integrated third year design studio with a structural design/environmental controls course, a codes course, and a building construction course, which asks the students to create a design development drawing set for a multi-family housing project. By coordinating the technical lectures and design studio, students show that they are able to synthesize a large body of knowledge learned over their first three years (undergrads).

**Investigative Skills.** Undergraduates are asked to conduct research at many points in the curriculum. A number of lecture courses in their first two years require students to investigate case studies of a variety of building types. During the first quarter of the senior project sequence students research a chosen topic, site and building type. Senior project faculty members critically assess their work for completeness and applicability to the issue at hand. The student’s ability to perform relevant research is evaluated for reliance on original sources, factual correctness, applicability to the topic, and overall logic.

**Fundamental Design Skills.** Undergraduate exposure to and refinement of basic design and environmental principles is disseminated throughout the curriculum, and is the focus of all design studios.

**Use of Precedents.** Students are exposed to the use of precedents in most design studios at Cal Poly Pomona. Studios all begin with a research phase, typically involving the use of case studies to explore issues of building type, technological innovation, materials, sustainability, and/or historical changes. Studios and lecture courses use the case study method to apply rigor and critical observation to the notion of precedents in design. Student research of design precedents is typically presented in studio and discussed for its thoroughness and applicability to the term project. Case studies are required as part of the research phase of the undergraduate senior project, where they are used to deepen
the analysis of a given building type in reference to trends may transform the type into new areas of concern in practice.

**Ordering Systems Skills.** Undergraduates are introduced to ordering systems during their first-year design studios where they examine built environments at the urban, district, block and individual building scales. The examination of ordering systems continues into second and third year studios. In their third-year students spend two-quarters designing a multi-family housing project requiring a comprehensive approach to the functional, programmatic, and technical aspects of their design. Specific exercises in building analysis require the students to diagram the ordering principles of significant buildings. This includes documenting structure, envelope, fenestration, circulation, lighting strategy, and program of a variety of buildings.

**Historical Traditions and Global Culture.** Students are principally exposed to historical traditions in the four-quarter required architectural history/theory sequence. Our diverse and multi-cultural teaching faculty offer studios sited in foreign settings such as Turkey, Haiti, Mexico, China, and parts of Europe. These studios serve to contrast accepted local building practices with alternative expressions borne out of differences in climate, financial capacity and vernacular building traditions. Our student population is extremely diverse and is engaged in different traditions and cultures as a matter of daily life on campus and in the southern California community. Students have access to several quarter-length or year-long exchange programs in Germany, Italy, Denmark, and Taiwan, as well as a summer studio in China.

**Cultural Diversity.** Undergraduate students in our program are the picture of cultural diversity. As noted elsewhere we have arguably one of the most diverse student populations in an architecture program in the country. The growing realities of global practice, coupled with the diverse student body and faculty, make cultural diversity a welcome topic of discussion in classes, seminars, and design studios. We have offered classes in culturally and economically diverse settings (such as Tijuana and Veracruz, Mexico), where the realities of a depressed economy overlaid on different concepts of family, serve to educate students and challenge them to understand and adequately serve different populations.

**Applied Research.** All Cal Poly Pomona students are made aware of the role of applied research and the role it plays in design, through design studios focused on materials science (prefabrication, concrete construction, wood construction, etc.); the use of technology in architecture; and sustainability, where the
monitoring of conditions within buildings is linked to the use of appropriate technologies for shading, cooling, heating and ventilation. Students act as research assistants and co-author materials for publication and conference presentations.

2. Building Practices, Technical Skills and Solutions

Pre-Design. Undergraduate students are first introduced to pre-design and programing issues in the second-year studio lecture that supports a program-driven studio design project. The relation of program and design is further advanced in the multi-family housing studio. The first quarter of the undergraduate senior project studio sequence specifically focuses on pre-design for the development of senior project. Pre-design services are discussed in professional practice courses, such as discussions of programming as additional services, and financial and legal/ethical issues. Programming as a discrete planning and critical thinking activity is a component of the multi-family housing sequence. The lecture component of this studio presents a range of programming techniques and methodologies for the design of housing.

Accessibility. Undergraduate students are introduced to ADA requirements at two different levels of knowledge: site and building design. In some courses the goal is to achieve student ability to design for accessibility within buildings, in other courses we aim to nurture continued discussion on accessibility across a site or at the urban scale. The second-year programming lecture course deals with circulation concerns as part of programming, while the design studio focuses on the development of an ADA compliant site circulation strategy. The strong emphasis of our program on social issues engenders discussions throughout the program on accessibility as a right of all human beings and as a professional responsibility of the architect. ADA is more formally addressed in the required codes lecture course.

Sustainable Design. Sustainability has long been a special interest in our Department. Sustainability is introduced in first year courses. In the undergraduate program sustainability is the focus of the spring quarter second year lecture and design studio. Many students take topic studios and professional electives focused in this area of study. Many students also choose to focus on issues of sustainability in their senior projects.

Site Design. Undergraduates begin developing site-planning skills in the first quarter of second year design studio and these skills are further developed in the sustainability studio. Site planning is also central to the housing studio and urban design studio. Senior project engages site design in the winter quarter studio and lecture course in parallel with investigations of specific site zoning and
program requirements.

**Life Safety.** Life safety is introduced to the undergraduates in second year in parallel with accessibility issues. The third-year housing studio and codes lecture courses address egress with regard to multi-family dwellings and local and state regulations. Life safety is further discussed in the construction courses, in the four structures courses and the two environmental controls courses.

3. **Integrated Architectural Solutions**

**Comprehensive Design.** The integrated studio blends Design, Structures and Construction in one integrated multi-housing design studio project. In response to shifts in NAAB criteria and an evaluation of Architectural Registration Exam (ARE) scores, the Department made a curricular shift focused on the development of greater technical integration in third and fifth year in the undergraduate program. This year the curriculum continues to adjust to place increased emphasis on the development of a comprehensive studio. These studios are tied to a parallel set of courses in structures, environmental control systems, a combined structures/environmental controls class, and a code compliance course.

**Construction Cost Control.** Construction costs are informally discussed with undergraduates during the core years of studio instruction, and depending on the nature of the topic may also be addressed in upper division topic studios. Research on funding, financial feasibility, and life-cycle costs are important factors in design development, especially for the urban design and housing studios. Feasibility and construction estimating are an integral part of the programming component of senior project and thesis.

Undergrads have extensive exposure to costs in professional practice courses. A new course “The Architect and the Development Process”, launched in fall 2014 specifically addresses issues of cost where students develop financial analyses as design project pro-formas. Students are asked to use this knowledge to develop a basic cost estimate for their buildings in senior project.

**Environmental Systems.** Undergraduates take a two-quarter environmental controls course sequence. Environmental control systems play a significant role in the Department’s curriculum. There are also integrated sustainable design studios, solar/daylighting and energy conservation courses and other electives that address environmental controls and green building design.
Structural Systems. Undergraduates take a four-quarter structures course sequence. The first of these is a fundamentals course tied to the tectonic design studio where structure is applied to individual studio project. Next in the sequence are two structural courses that address building construction types: wood, steel, concrete, and masonry. The final required structures class examines the impact of seismic and lateral forces. All four courses are taught in a lecture format with associated physical testing activities. The newly built structures lab has greatly improved the ability for faculty to demonstrate structural forces through hands on learning.

Building Envelope Systems. Undergraduates take a sequence of courses to develop their knowledge and application of building envelope systems. This includes coursework in the environmental controls and construction courses. Building envelope design is a component of the housing studio.

Building Service Systems. Undergraduates study building service systems within the environmental controls courses, and in the integrated structures/ENV controls course tied to the housing studios.

Building Materials and Assemblies. Undergraduates take a two-quarter materials construction course sequence. The development of construction means, methods and assemblies is also part of the housing design studio, the tectonic studio, many upper division topic design studios, and senior project and grad thesis.

4. Professional Practice

Collaboration. Undergraduate students are introduced to collaboration within the ENV disciplines at several points in their studies. The required 4th year urban design lecture and studio is a team-based, cross-disciplinary course taught by both landscape architecture and architecture faculty. In this course, students from both disciplines work together on a team project.

Human Behavior. Undergraduate students are asked to examine and understand aspects of human behavior and its effects on design in the fall second year studio lecture course. The course includes content on the development of suburbia, the changes to our natural environments, and the study of cultural behaviors in both domestic and foreign human groups. Students study the formation of gender roles, privacy, labor and the various modes of shelter through the examination of cultural differences in far ranging groups of people.

Client Role in Architecture. Cal Poly Pomona has for some years offered studios that are community-based or have as principal aims the betterment of the public realm. This includes the topic studios
based on the needs of actual communities (such as the Tijuana, Haiti, Park Service, and historic preservation studios.) The needs of the public and community are also addressed in the undergraduate urban design studio and lecture, which use actual design projects as the focus of the studio, working with local groups and city agencies. All students are exposed to the legal and ethical responsibilities that the architect has to the client in their professional practice courses.

**Project Management.** All architecture students are exposed to office organization and specific team roles in the first Professional Practice course. Project management is described in the context of office typology and project delivery methodologies. Students engage in the development of a work plan for a prototypical project budget based on a calculated fee. Students are asked to describe responses to specific “what if” conditions and describe how these would impact their management plan.

**Practice Management.** All architecture students are exposed to practice management in two courses: ARC 471/A Professional Practice and ARC 473 The Architect and the Development Process. Topics include office formulation, organizational structure, legal structure, liability, marketing, taxation, finance/fees, and real-estate development processes.

**Leadership.** Leadership is a part of every design studio, but it is most directly emphasized in the urban design studio in the context of making larger planning and community decisions. All students are instructed in the role of the architect in practice and the community in professional practice courses. These courses look at the architect’s role in practice and his or her interaction with various regulatory agencies. As part of the course all students attend and document a local design review meeting to assess the performance of an architect in this regulatory context. Students are provided credit in a range of classes, for participation and leadership in the student professional organization AIAS and encouraged to discuss lessons learned from this leadership in classroom discussion.

**Legal Responsibilities, Ethics and Professional Judgment.** All architecture students are instructed in the legal parameters of professional practice. Liability is discussed in the context of contracts and various organizational structures of practice, as well as how an architect limits personal liability through insurance and standard of care. Students analyze case studies for exposure to the AIA’s Cannons of Ethics and how these play a role in professional judgment. Students are also presented with an ethical dilemma and asked to propose possible ethical solutions to the situation. The actual resolution of the scenario is presented
following these discussions. Differences between the real and the student solutions are discussed. All students are asked to write about the ethical dimensions of the participants in the design review observation assignment.

**Community and Social Responsibility.** Undergraduate students are introduced to social responsibility and community engagement in a number of studio courses. The housing studio is aimed at understanding low-income housing and the need for architects to make decisions in the context of larger community goals. The urban design studio explores these dimensions as well, but at a larger scale. All students are engaged in a discussion of social responsibility in the professional practice courses as part of discussions on the legal and ethical responsibilities of practice.

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<td>This section is about the assurance that the degree is meeting the expectations.</td>
<td>The Department of Architecture uses a variety of assessment metrics to ensure that the program is meeting expectations and learning outcomes. These include ongoing program assessment by faculty, reviews of student work by faculty and outside observers and a rigorous accreditation process by the National Accrediting Architectural Board (NAAB). Program assessments are performed through regular monitoring of the curriculum by the Department Chair, the faculty via faculty meetings, and the Department’s Curriculum Committee. Curriculum assessment at the Department level employs a variety of resources to inform necessary changes, such as input from members of the profession, alumni, students, and NAAB criteria. Members of the Department Curriculum Committee review student projects from each class level. The committee meets to discuss whether course outcomes demonstrate compliance with NAAB student performance criteria requirements.</td>
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<td>Describe the assessment that you have put into place to measure whether the curricular and co-curricular components are meeting their purposes.</td>
<td>External input is gathered through attendance by faculty or the Chair at Association of Collegiate Schools of Architecture (ACSA) and National Council of Architectural Registration Board’s Intern Development Program (NCARB IDP) conferences, by attending reviews at other schools, through discussion with outside critics, and via alumni gatherings and surveys. Internal input is done through advising, through meetings with the Cal Poly Pomona Chapter of American Institute of Architecture Students (AIAS) representatives, and through quarterly meetings of the Chair with year cohorts (informally called “chair chats”).</td>
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<td>Describe the assessment that you have put into place to measure to what extent the program is achieving its expectations and learning outcomes at the desired levels.</td>
<td>At the beginning of each quarter a juried exhibit of student work, called the Interim Exhibit is displayed publicly so that students, faculty, alumni, and invited professionals can see the best work</td>
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<td>Describe the feedback that you collect, internally and externally, to support your assessment.</td>
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produced in the previous quarter. Outside educators and professionals attend student presentations at midterm and during final reviews every quarter. These project presentations are required for all students in all studios. We receive extensive feedback through this process, as these reviews are often daylong discussions. The final undergraduate senior project juried exhibit and reviews are held off campus. At this review over 50 jurors, a mix of academics and practitioners, are invited to respond to student presentations of their work. Our faculty members regularly attend similar reviews at other institutions in order to gauge our students’ progress in comparison to other programs.

To ensure that students are prepared for third year, which is the most demanding year in terms of technical and design requirements, the department requires that students receive a minimum grade of C- in their design studio of spring quarter of second year, and for each student to undergo a portfolio review before they are allowed to continue onto third year. Lecture courses require homework, essays and research papers. In addition, material learned in lecture courses taught alongside studios must be synthesized and implemented into the students’ design projects. This is particularly true of the 3rd year integrated design studio, which requires students to implement knowledge learned in environmental controls, structures, codes, and building technology lectures.

When issues arise based on these assessments they are discussed in faculty meetings, which are also attended by a representative from the student body (AIAS). After discussion, a direction is established through faculty consensus and referred to the Curriculum Committee for development. The committee then returns to the faculty with a developed proposal that the faculty votes to approve. Upon approval, the proposal is then reviewed by the necessary committees or VPs on campus, and then implemented.

The following external assessments of the Department have endorsed our programs:

**NAAB Accreditation.** The Department of Architecture underwent an accreditation review in February 2014 by the National Architectural Accrediting Board (NAAB). After leading an extensive review of our programs, the National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, granted the undergraduate (B.Arch) program an 8-year term of accreditation. This is the longest term allowable, and is a reflection of the strengths of the program.
Outside Rankings. The 2016 publication DesignIntelligence, a yearly report published by the Design Futures Council named Cal Poly Pomona as one of the Top 20 undergraduate architecture programs in the US and the program was also named as one of the Top 5 architecture programs in the West. The program was also listed as being in the top ten nationally in the area of “Construction Methods & Materials” and “Sustainable Design Practices & Principles.”

Awards and Scholarships. Students within the program have received national and regional awards and scholarships from professional organizations. Many of these awards and scholarships require submission of portfolios showing academic work.

Internships, employment, and licensure. 500-hours of paid internships are required of all architecture students. The department believes that this is an essential part of each student’s professional development. Internship hours are recorded via the National Council of Architectural Registration Boards (NCARB), which ensure that the work is useful and meets professional experience requirements. There are four categories that interns must earn experience in: Pre-Design, Design, Project Management, and Practice Management to satisfy the internship requirement for licensure.

Graduates of the program have gained employment in award-winning national and international design firms. And they have gained admittance to leading graduate programs, including Princeton, Harvard, Columbia, UCLA, and programs in Europe and Japan.