# CAREER TECHNICAL EDUCATION (CTE) TWO-YEAR PROGRAM REVIEW

**Program:** Architecture    **Planning Year:** 2018    **Unit:** Engineering & Technology

**Cluster:** WED    **Last Year of CPPR/Voc. Ed Review:** 2016

**INSTRUCTIONS:** CTE programs will complete and submit the below Two-year Program Review as part of a regular two-year program review cycle (Ed Code 78016). In addition, CTE programs will complete and submit an APPW on an annual basis and an Instructional Comprehensive Program Planning and Review (CPPR) every four years according to the institutional comprehensive planning cycle for instructional programs.

**California Ed Code 78016**

A. Every vocational or occupational training program offered by a community college district shall be reviewed every two years by the governing board of the district to ensure that each program, as demonstrated by the California Occupational Information System, including the State-Local Cooperative Labor Market Information Program established in Section 10533 of the Unemployment Insurance Code, or if this program is not available in the labor market area, other available sources of labor market information, does all of the following:

   1. Meets a documented labor market demand.

   2. Does not represent unnecessary duplication of other manpower training programs in the area.

   3. Is of demonstrated effectiveness as measured by the employment and completion success of its students.

B. Any program that does not meet the requirements of subdivision (A) and the standards promulgated by the governing board shall be terminated within one year.

C. The review process required by this section shall include the review and comments by the local Private Industry Council established pursuant to Division 8 (commencing with Section 15000) of the Unemployment Insurance Code, whose review and comments shall occur prior to any decision by the appropriate governing body.

D. This section shall apply to each program commenced subsequent to July 28, 1983.

E. A written summary of the findings of each review shall be made available to the public.

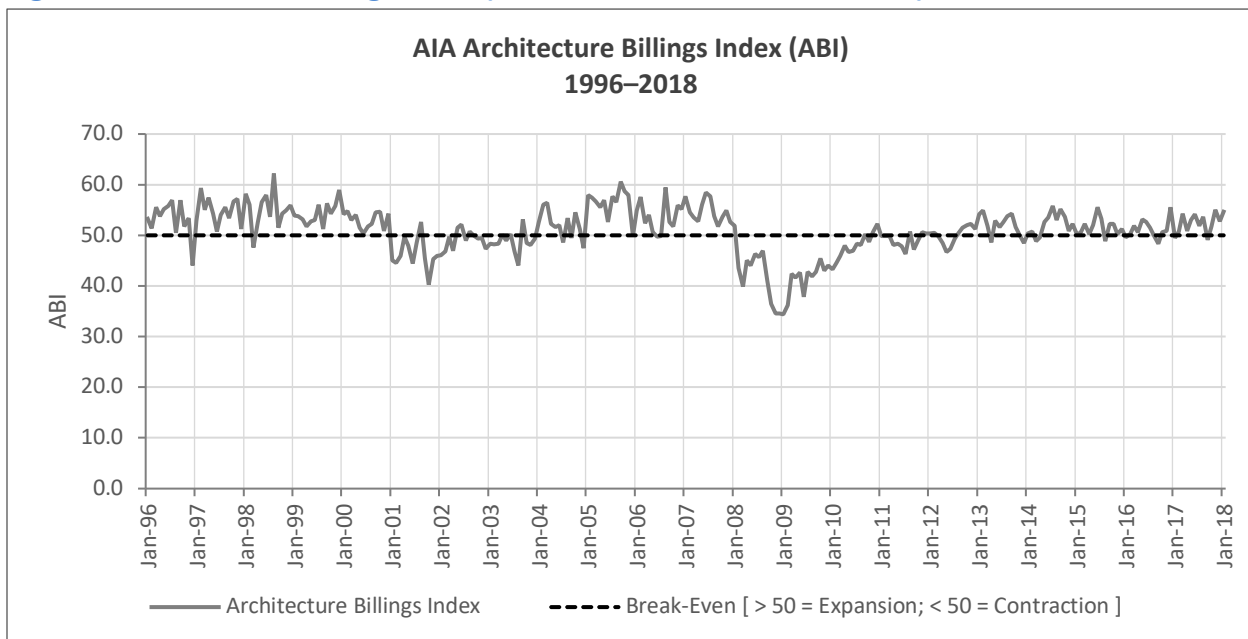**NARRATIVE:**  Review your CTE program according to the following three prompts with analysis of data provided by the State:  http://www.labormarketinfo.edd.ca.gov/.

**I.   Meets a documented labor market demand,** http://www.labormarketinfo.edd.ca.gov/.

Although the architectural profession and related occupations are not one of California's major growth industries, these remain essential fields within our society—locally, regionally, and nationally. Within California, one has only to look at state and county population projections (Figure 1) to grasp the amount of design and construction that lies ahead, not to mention the rehabilitation and replacement of existing building stock and infrastructure. Indeed, the long-term prospects for this field are bright, as they are for California itself.

**Figure 1: Population Projections (Calif. Dept. of Finance)**
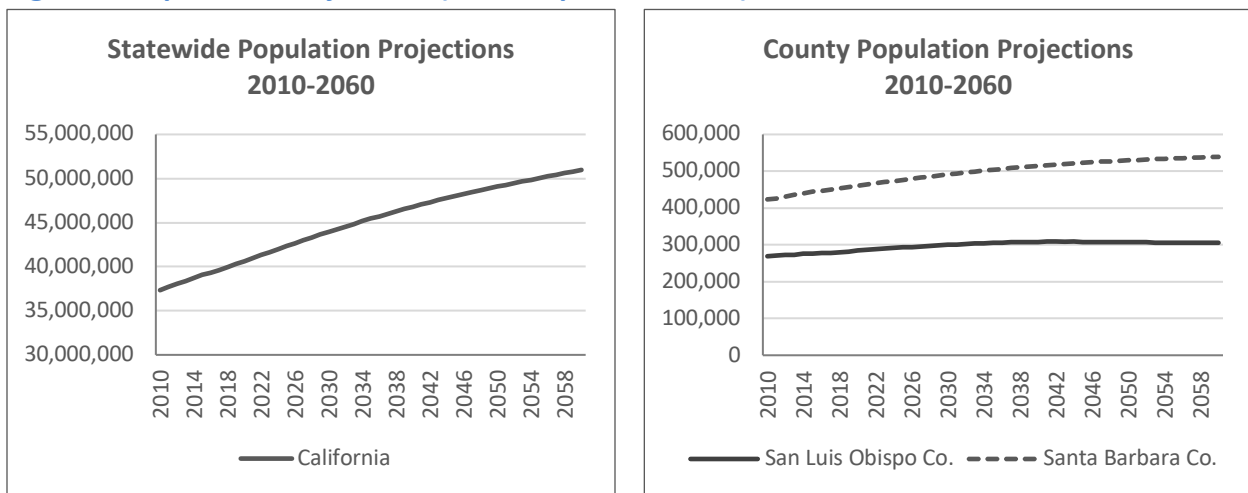


**Figure 2: Architecture Billings Index (American Institute of Architects)**

**2**  S a n  L u i s  O b i s p o  C o u n t y  C o m m u n i t y  C o l l e g e  D i s t r i c t
C a r e e r  T e c h n i c a l  E d u c a t i o n  ( C T E )  T w o - Y e a r  P r o g r a m  R e v i e w
Approved Document to be Used for Submission Spring 2018, September 15, 2017

Economic and industry indicators tell us that our profession could be said to have truly emerged from the Great Recession and painfully slow recovery in 2013. The leading indicator for the health of the architectural profession is the American Institute of Architects (AIA) "Architectural Billing Index" (ABI). The chart on the preceding page (Figure 2) tracks this index longitudinally and captures well the economic vicissitudes of the profession, while also showing its sustained good health over the last five years. registers improvement nationwide, and with the West showing the greatest gains over the last six months—only the Northeast declined. While the commercial sector has not been as strong, the residential market is rebounding significantly, the institutional sector more modestly.

Moreover, housing starts, another leading economic indicator have been climbing steadily since 2010 in most parts of the country, including California and the West, as the chart below illustrates (Figure 3). In the most recent year for which data was available, 2017, California saw a year-over-year increase in housing starts of 12.36 percent. These indicators naturally fluctuate throughout the year and register both seasonal variations and larger economic cycles.

The California Department of Finance also uses building permit valuations to track the construction industry, which of course is directly related to the demand for architectural services. The chart on the following page (Figure 4) shows annual permit valuation data since 1999, including projections to 2021. What is instructive about this dataset is that it includes both residential and nonresidential construction, thereby providing a more complete picture of the construction market in any given year. Notice here that residential construction has consistently remained the dominant sector in California's construction market, though both sectors seem to fluctuate in tandem. Pertinent to this discussion is that both market sectors are projected to increase over the next several years.
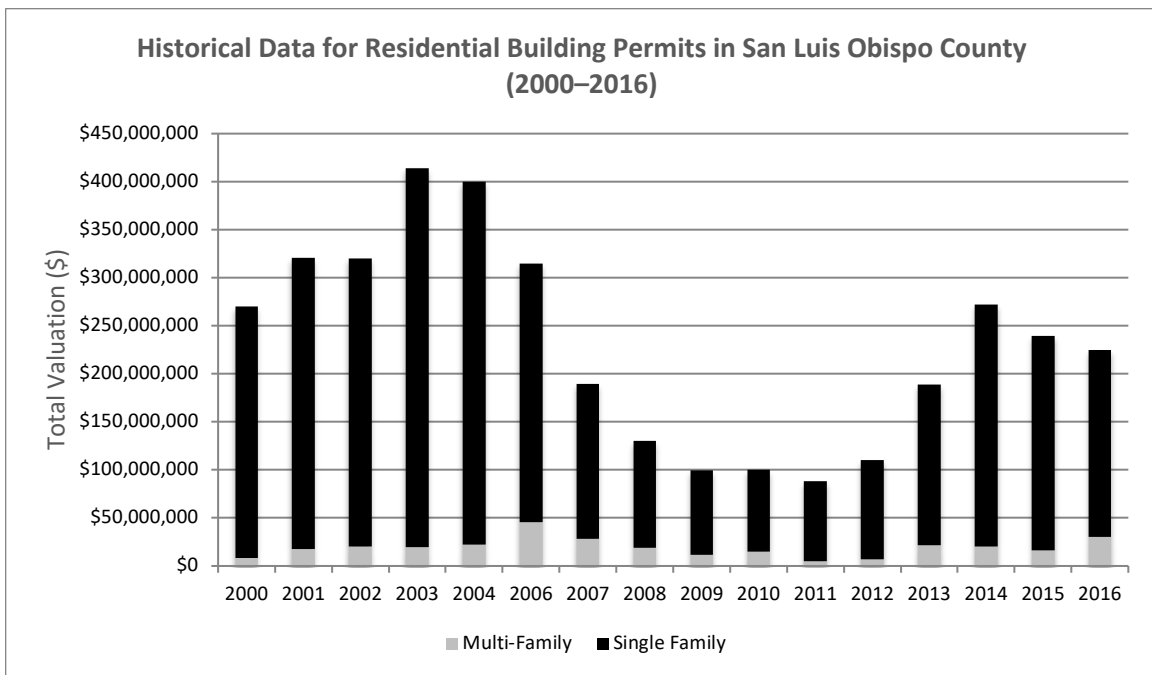
**Figure 3: Housing Starts: California (Calif. Dept. of Finance) and West (U.S. Census)**
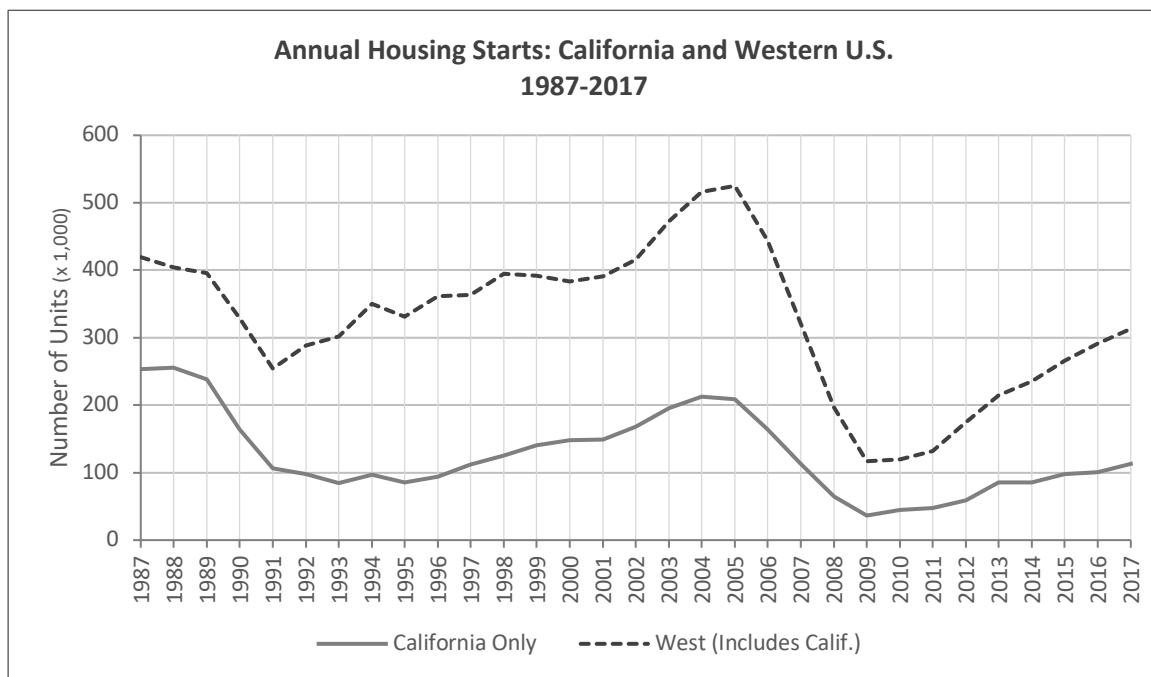
**Figure 4: California Building Permits (Calif. Dept. of Finance)**



Construction Permits in California
1997–2017 (Actual)
2018–2021 (Projected)
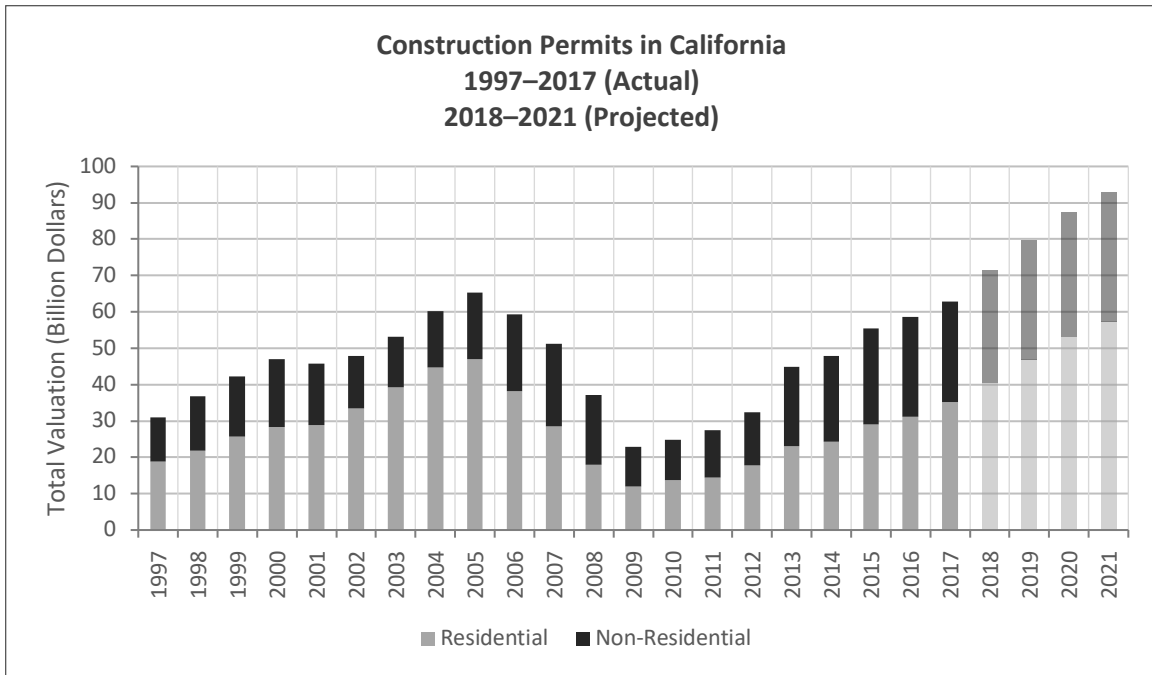
**Figure 5: San Luis Obispo County Building Permits (U.S. Census)**



Historical Data for Residential Building Permits in San Luis Obispo County
(2000–2016)

Why give so much attention to statewide construction and economic data? Is this discussion not supposed to be about strictly *local* factors? The truth is that the market for architectural services is not constituted in the same way it is for, say, auto mechanics. While some local architectural firms, especially the smallest ones, do indeed have strictly local practices, most firms of any size—and even some smaller ones—design projects throughout California and sometimes beyond. For this reason, projects in areas far afield can have a positive impact on our local economy and ultimately translate into local jobs.

The condition of the local design and construction market is also important, as political and economic conditions within San Luis Obispo County do result in trends that sometimes diverge from those for California as a whole.

Historical U.S. census data on residential building permits issued in San Luis Obispo County supports this view. As the chart on the preceding page indicates (Figure 5), the local market long ago rebounded from its recessionary trough and climbed sharply until 2014, though some softening has occurred locally in the years since. While no data for 2017 is yet available, local architects and builders report anecdotally that they are busy, a trend that augurs well for both the construction industry and design professions. The market remains well below its peak in 2003 and 2004, however. The County and its constituent cities continue to pursue low-growth policies, and the paucity of affordable housing remains a drag on our local markets.

Generally, most of the architectural services on any given project are provided well before any construction permits are issued or a shovelful of earth turned; consequently, we expect demand for design services to lead, not follow, the economic indicators for construction. Employment in architecture similarly tracks with this demand.

**Figure 6: Statewide Employment Trends (California Employment Development Dept.)**
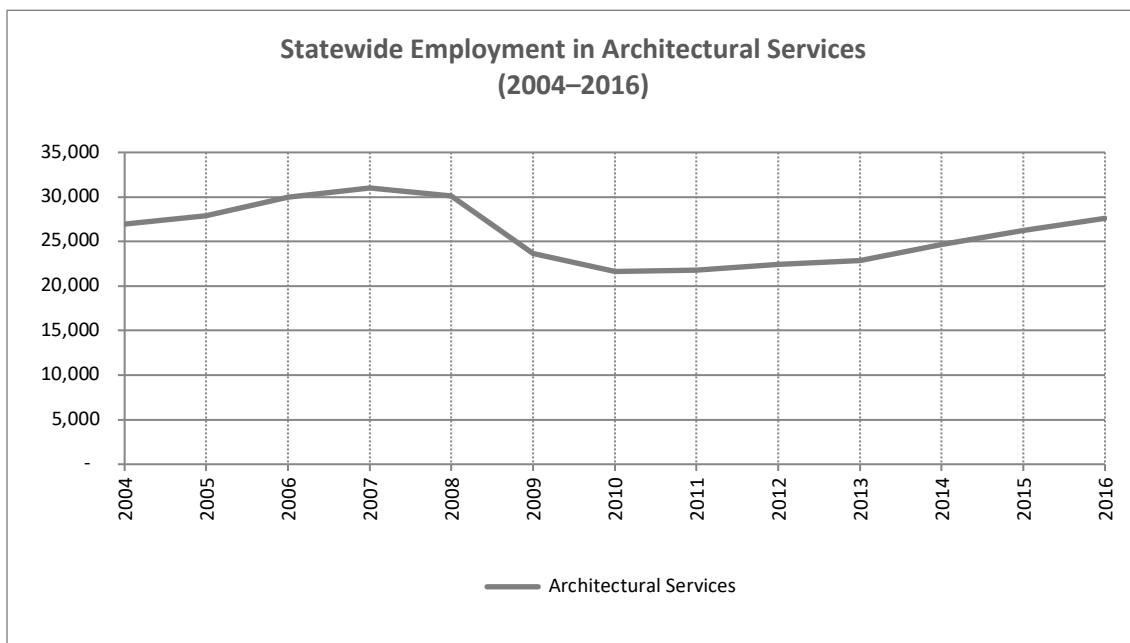
Statewide, over the period 2014–2024, the California Employment Development Department (CEDD) projects 9.7 percent growth in employment for the category "architects, except landscape and naval," as defined by federal standard occupational classification (SOC) code 17-1011. That translates to a gain of 1,500 jobs over this ten-year period but does not include an estimated 2,500 replacements of current employees expected to retire or otherwise leave this occupation.

The chart on the preceding page (Figure 6) shows the general trends for statewide employment in the broad category of architectural services over the past 12 years, defined according to the National American Industry Classification System (NAICS). After the boom and bust cycles of ten years ago, employment has been steadily rising, a trend that has continued beyond 2016.

The statewide employment levels are significant for us, because we serve not only local students who frequently aspire to someday work elsewhere in California but also out-of-area students who come to us for our articulation with Cal Poly. Students who move to San Luis Obispo to attend Cuesta and, for the most part, continue at Cal Poly are just as likely to remain in our county afterwards and staff our local firms as students who grew up here.

Locally, the number of employees in architecture and related fields is obviously much smaller than the statewide number, but projected growth in relation to size is expected to be quite significant. For San Luis Obispo and Santa Barbara Counties, CEDD projects an increase in architectural employment by, respectively, 33.3 and 23.1 percent between 2014 and 2024. Again, replacement job openings are not included in those figures.

CEDD projects employment in the related SOC category 17-3011, "architectural and civil drafters," to grow by a more modest 1.4 percent statewide over that same period, as digital technology continues to encroach on lower- to mid-level, white-collar jobs. Employment in this category is expected to grow by 33.1 percent in San Luis Obispo County and 17.6 percent in Santa Barbara County. It is interesting to note that the cadre of drafters in San Luis Obispo is 33 percent smaller than that for architects, while the percentages are reversed for Santa Barbara.

One trend we continue to observe is that some of the lines between traditional career technical education and professional training at the university level are becoming increasingly blurred, in no small part due to computerization. It is the very reason why programs such as Cuesta's are so important, why we must continue to broaden access to the professions, to be the first rungs on the ladder of career opportunity for populations that have too often been excluded.

## II. Does not represent unnecessary duplication of other manpower training programs in the area.

For university-bound students, Cuesta's architecture program is the only community college architecture programs in or near our service area that offers full two-year articulation with Cal Poly. In addition to attracting our local students, numbers we expect to see increase due the Cuesta Promise program, we are again seeing more students transferring from Allan Hancock, once they realized that school was not going to prepare them fully for university transfer in this field.

Several years ago, we were running an extensive program of elective courses that prepared students and local professionals for LEED accreditation, under a program established by the United States Green Building Council (USGBC). Demand for those courses softened over the last two years, and we canceled them last year; perhaps after several years of solid enrollment, pent-up local demand may have been satisfied. If we see a resurgence of interest, we would offer them again.

## III. Is of demonstrated effectiveness as measured by the employment and completion success of its students, https://misweb.cccco.edu/perkins/Core_Indicator_Reports/ Summ_CoreIndi_TOPCode.aspx

Referring to the Perkins IV Core Indicators of Performance shown in Figure 7 on the following page, it is clear that Cuesta's architecture students, although relatively small in number, perform at or above the State averages in every core area except Core 5a and 5b, which pertain to "nontraditional" student participation and completion. We believe our shortcomings with respect to Core 5 reflect little more than the demographics of our service area and the relatively few nontraditional students who are attracted to our program in the first place.

Cuesta's architecture students succeed in ways that are not necessarily reflected in the institutional data. The program's low rate of "completers"—that is, A.S. degrees or Certificates awarded—reflect the priorities of our predominantly transfer-oriented students, who frequently do not bother to apply for a Cuesta degree. There are even Cuesta students who complete the architecture program without ever declaring architectural technology as a major. The key point here is that each year, more than half of Cal Poly's architecture transfer students have come from Cuesta, a rate none of the other community college programs have even come close to matching.

Data sharing between Cal Poly and Cuesta has been a problem for many years, a circumstance that has made it difficult for transfer-oriented programs such as architecture, among others, to document their track records with official data. While representatives from Cal Poly's architecture department have informally shared transfer data with Cuesta's architecture faculty over the years, they have always done so *unofficially* and thus not for publication or attribution. It must be noted, however, that addressing the problem of data sharing between institutions is really not the province of individual faculty members; rather, it is an issue more appropriately addressed by senior administration, at the superintendent/president or chancellor level.

## Figure 7: Student Performance Indicators

**PERKINS IV Core Indicators of Performance by 6-digit Vocational TOP Code**

**Summary Detail Report for 2016-2017 Fiscal Year Planning**

**CUESTA COLLEGE**

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### 020100  Architecture and Architectural Technology

| | Core 1 Skill Attainment | | | Core 2 Completions | | | Core 3 Persistence | | |
|---|---|---|---|---|---|---|---|---|---|
| | Percent | Count | Total | Percent | Count | Total | Percent | Count | Total |
| Program Area Total | 93.18 | 41 | 44 | 97.22 | 35 | 36 | 95.45 | 42 | 44 |
| Female | 100.00 | 8 | 8 | 100.00 | 7 | 7 | 100.00 | 8 | 8 |
| Male | 91.43 | 32 | 35 | 96.43 | 27 | 28 | 94.29 | 33 | 35 |
| Non-traditional | 100.00 | 8 | 8 | 100.00 | 7 | 7 | 100.00 | 8 | 8 |
| Displaced Homemaker | 100.00 | 2 | 2 | 100.00 | 2 | 2 | 100.00 | 2 | 2 |
| Economically Disadvantaged | 91.18 | 31 | 34 | 96.30 | 26 | 27 | 94.12 | 32 | 34 |
| Limited English Proficiency | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Single Parent | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Students with Disabilities | 0.00 | 0 | 1 | | 0 | 0 | 100.00 | 1 | 1 |
| Technical Preparation | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| | | | | | | | | | |
| District | 93.18 | 41 | 44 | 97.22 | 35 | 36 | 95.45 | 42 | 44 |
| State | 93.07 | 16,629 | 17,868 | 92.85 | 9,464 | 10,193 | 91.95 | 16,363 | 17,795 |

| | Core 4 Employment | | | Core 5a NT Participation | | | Core 5b NT Completion | | |
|---|---|---|---|---|---|---|---|---|---|
| | Percent | Count | Total | Percent | Count | Total | Percent | Count | Total |
| Program Area Total | 100.00 | 4 | 4 | 18.18 | 8 | 44 | 18.92 | 7 | 37 |
| Female | | 0 | 0 | 100.00 | 8 | 8 | 100.00 | 7 | 7 |
| Male | 100.00 | 4 | 4 | 0.00 | 0 | 35 | 0.00 | 0 | 29 |
| Non-traditional | | 0 | 0 | 18.18 | 8 | 44 | 18.92 | 7 | 37 |
| Displaced Homemaker | | 0 | 0 | 50.00 | 1 | 2 | 50.00 | 1 | 2 |
| Economically Disadvantaged | 100.00 | 2 | 2 | 23.53 | 8 | 34 | 25.00 | 7 | 28 |
| Limited English Proficiency | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Single Parent | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Students with Disabilities | | 0 | 0 | 0.00 | 0 | 1 | 0.00 | 0 | 1 |
| Technical Preparation | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| | | | | | | | | | |
| District | 100.00 | 4 | 4 | 18.18 | 8 | 44 | 18.92 | 7 | 37 |
| State | 53.78 | 1,835 | 3,412 | 31.23 | 6,727 | 21,542 | 34.06 | 4,401 | 12,920 |

**The DR notation indicates privacy requirements - EDD requires that counts less than six not be displayed.**

> Performance Rate Less Than Goal is Shaded

Core 1 - Skill Attainment, GPA 2.0 & Above: 91.00% Performance Goal - ( 2013- 2014)
Core 2 - Completions, Certificates, Degrees and Transfer Ready: 83.00% Performance Goal - ( 2013- 2014)
Core 3 - Persistance in Higher Education: 88.00% Performance Goal - ( 2013- 2014)
Core 4 - Employment: 74.05% Performance Goal - ( 2013- 2014)
Core 5 - Training Leading to Non-traditional Employment: Greater than 22.92% Participation & 25.57% Completion - ( 2013- 2014)

Source: CCCCO MIS Database, EDD Base Wage File, CSU Chancellor's Offce,
UC Office of the President, 2000 Census, Student Loan Clearing House

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**8** S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
C a r e e r   T e c h n i c a l   E d u c a t i o n   ( C T E )   T w o - Y e a r   P r o g r a m   R e v i e w
Approved Document to be Used for Submission Spring 2018, September 15, 2017

Cuesta remains one of only three community college-level architecture programs with full two-year articulation with Cal Poly. We have comparable agreements with Bachelor of Architecture programs at Woodbury University and NewSchool of Architecture and Design.

In an effort to better track the careers of our alumni, Cuesta's architecture faculty have initiated a search of LinkedIn profiles belonging to individuals whose names have appeared on our course rosters dating back to 2004. This project is only in its infancy, with much work remaining; but based on information gleaned thus far, we can report the following:

- More than 90 percent of the Cuesta architecture students who applied for transfer to Cal Poly's architecture program for 2017–18 were accepted.
- Other professional architecture degree programs that have accepted Cuesta students as transfers over the past fifteen years include, among others: Illinois Institute of Technology, NewSchool of Architecture and Design, UCLA, California College of the Arts, Sci-Arc, University of Southern California, University of Oregon, University of Arizona, Arizona State University, University of Colorado at Boulder, and Woodbury University.
- The list below is comprised of firms or companies that have employed alumni of Cuesta's architecture program. Some were hired as interns, others as drafters, others as architectural designers after transferring from Cuesta to Cal Poly and completing their professional degree. In any case, Cuesta was their point of entry into professional live, both within and beyond our community. The list includes:

**Firms in San Luis Obispo County:**

| | | |
|---|---|---|
| Arris Studio Architects | San Luis Obispo | CA |
| Classical Design Group | San Luis Obispo | CA |
| Garcia Architecture + Design | San Luis Obispo | CA |
| Hayward Lumber (Kitchen Design Dept.) | San Luis Obispo | CA |
| Ian Saudé | San Luis Obispo | CA |
| InBalance Green | San Luis Obispo | CA |
| Isaman Design | San Luis Obispo | CA |
| Mode Associates | San Luis Obispo | CA |
| Omni Design Group | San Luis Obispo | CA |
| Purlieu Mgmt. & Landscape Construction | San Luis Obispo | CA |
| Richardson Properties/Christie's Intl. Real Estate | San Luis Obispo | CA |
| RRM Design Group | San Luis Obispo | CA |
| Studio 2G Architects | San Luis Obispo | CA |
| Studio Design Group Architects | San Luis Obispo | CA |
| Ten Over Studio | San Luis Obispo | CA |
| MW Architects | Arroyo Grande | CA |

**Other California Firms:**

| | | |
|---|---|---|
| R&A Architecture + Design, Inc. | Culver City | CA |
| ODS Architecture | Emeryville | CA |
| Tesla | Fremont | CA |
| MNOffice | Los Angeles | CA |
| City of Napa | Napa | CA |

**9** S a n   L u i s   O b i s p o   C o u n t y   C o m m u n i t y   C o l l e g e   D i s t r i c t
C a r e e r   T e c h n i c a l   E d u c a t i o n   ( C T E )   T w o - Y e a r   P r o g r a m   R e v i e w
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| | | |
|---|---|---|
| Danmeier Architects | Novato | CA |
| Von Raesfeld & Associates | Petaluma | CA |
| Belli Architectural Group | Salinas | CA |
| Ferguson Pape Baldwin Architects | San Diego | CA |
| Roesling Nakamura Terada Architects | San Diego | CA |
| Autodesk | San Francisco | CA |
| Kalman Varga Design | San Francisco | CA |
| Piazza Construction | San Francisco | CA |
| Skidmore Owings Merrill, LLC | San Francisco | CA |
| Aedis Architects | San Jose | CA |
| Anderson Brulé Architects, Inc. | San Jose | CA |
| Salvatore Caruso Design Corporation | Santa Clara | CA |
| Mint Design Studio | Santa Cruz | CA |
| LDA Partners, LLP | Stockton | CA |
| **Out-of-State Firms:** | | |
| U. Colorado Denver | Denver | CO |
| dandelab | Fargo | ND |
| Office for Metropolitan Architecture/OMA | New York | NY |
| Oh Planning + Design | Portland | OR |

We shall continue to update this information as our LinkedIn project progresses. In time, many names will be added as we build our database.

In addition to information students share with us or post on social media, Cuesta's architecture faculty have on numerous occasions written letters of recommendation for former students who are attending Cal Poly and applying for university scholarships, off-campus study programs, and the like. We also on occasion visit studio reviews and thesis exhibitions at Cal Poly and personally see the work of our alumni on display, regardless of whether they ever told us they were attending, and regardless of whether the university has shared official transfer data with us.

**10** S a n  L u i s  O b i s p o  C o u n t y  C o m m u n i t y  C o l l e g e  D i s t r i c t
C a r e e r  T e c h n i c a l  E d u c a t i o n  ( C T E )  T w o - Y e a r  P r o g r a m  R e v i e w
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