



Labor Market Analysis for Program Recommendation

Architecture Drafting and Design Occupations

Cabrillo College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research
June 2022

Recommendation

Based on all available data, there appears to be an “undersupply” of Architecture Drafting and Design workers compared to the demand for this cluster of occupations in the Bay region and in the SC-Monterey sub-region (Monterey, San Benito, Santa Cruz counties). There is a projected annual gap of about 1,948 students in the Bay region and 48 students in the SC-Monterey Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0953.10 Architectural Drafting programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at Cabrillo College and in the region.

This report profiles Architecture Drafting and Design Occupations in the 12 county Bay region and in the SC-Monterey sub-region for a Regional program recommendation for Cabrillo College.

- **Architectural and Engineering Managers (11-9041):** Plan, direct, or coordinate activities in such fields as architecture and engineering or research and development in these fields. Excludes “Natural Sciences Managers” (11-9121).
Entry-Level Educational Requirement: Bachelor’s degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 12%
- **Architects, Except Landscape and Naval (17-1011):** Plan and design structures, such as private residences, office buildings, theaters, factories, and other structural property. Excludes “Landscape Architects” (17-1012) and “Marine Engineers and Naval Architects” (17-2121).
Entry-Level Educational Requirement: Bachelor’s degree
Training Requirement: Internship/residency
Percentage of Community College Award Holders or Some Postsecondary Coursework: 8%
- **Architectural and Civil Drafters (17-3011):** Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Use knowledge of building materials, engineering practices, and mathematics to complete drawings.
Entry-Level Educational Requirement: Associate’s degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 52%

Occupational Demand

Table 1. Employment Outlook for Architecture Drafting and Design Occupations in Bay Region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Architectural and Engineering Managers	14,260	14,549	288	2%	5,310	1,062	\$75	\$99
Architects, Except Landscape and Naval	6,564	6,772	207	3%	2,608	522	\$31	\$45
Architectural and Civil Drafters	3,832	3,822	-9	0%	1,854	371	\$26	\$30
Total	24,655	25,143	487	2%	9,773	1,955		

Source: EMSI 2021.4

Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Architecture Drafting and Design Occupations in SC-Monterey Sub-region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Architectural and Engineering Managers	230	243	12	6%	95	19	\$64	\$85
Architects, Except Landscape and Naval	235	237	1	1%	91	18	\$24	\$32
Architectural and Civil Drafters	120	115	-5	-4%	59	12	\$25	\$30
Total	585	595	9.7	2%	245	49		

Source: EMSI 2021.4

SC-Monterey Sub-Region includes: Monterey, San Benito, Santa Cruz Counties

Job Postings in Bay Region and SC-Monterey Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (May 2021 - Apr 2022)

Occupation	Bay Region	SC-Monterey
Architectural and Engineering Managers	12,363	106
Architects, Except Landscape and Naval	2,292	56
Civil Drafters	169	5
Architectural Drafters	101	2
Biofuels/Biodiesel Technology and Product Development Managers	7	0

Source: Burning Glass

Table 4a. Top Job Titles for Architecture Drafting and Design Occupations for latest 12 months (May 2021 - Apr 2022) Bay Region

Title	Bay	Title	Bay
Engineering Manager	533	Senior Engineering Manager	105
Project Architect	246	Architect	99
Director Of Engineering	229	Senior Project Engineer	94
Project Engineer	140	Vice President Of Engineering	87
Engineering Program Manager	123	Director, Engineering	74
Architectural Designer	120	Head Of Engineering	57
Chief Engineer	119	Manager, Engineering	55
Engineering Project Manager	116	Architectural Captain	49
Mobile Engineering Manager	114	Architectural Project Manager	49

Source: Burning Glass

Table 4b. Top Job Titles for Architecture Drafting and Design Occupations for latest 12 months (May 2021 - Apr 2022) SC-Monterey Sub-Region

Title	SC-Monterey	Title	SC-Monterey
Chief Engineer	11	Architectural Designer	3
Director Of Engineering	11	Architectural Designer/Project Manager	3
Architect/Project Manager	8	Assistant Director For Early Engagement	3
Project Architect	6	Cadd/Drafting	3
Architectural Project Manager	5	Educational Facilities Planner/Analyst	3
Mobile Engineering Manager	5	Engineering Manager - Jps	3
Architect	4	Project Engineer, Actuators	3
Building Architect	4	Architectural Captain	2
Landscape Architect Project Manager	4	Associate Director Of Commencement, Student Ceremonies, And Engagement	2

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Architecture Drafting and Design Workers in Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Architectural Services	5,085	4,941	-3%	20%
Engineering Services	4,282	4,353	2%	17%

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Electronic Computer Manufacturing	1,601	1,695	6%	6%
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	1,050	1,152	10%	4%
Landscape Architectural Services	1,001	981	-2%	4%
Semiconductor and Related Device Manufacturing	937	883	-6%	4%
Research and Development in Biotechnology (except Nanobiotechnology)	612	762	25%	3%
Surveying and Mapping (except Geophysical) Services	527	610	16%	2%
Corporate, Subsidiary, and Regional Managing Offices	548	478	-13%	2%
Building Inspection Services	481	560	17%	2%

Source: EMSI 2021.4

Table 6. Top Employers Posting Architecture Drafting and Design Occupations in Bay Region and SC-Monterey Sub-Region (May 2021 - Apr 2022)

Employer	Bay	Employer	SC-Monterey
Google Inc.	535	University Of California	12
Apple Inc.	414	Joby Aviation	6
Facebook	275	Benchmark Hospitality International	5
Lucid Motors Inc	175	Zero Motorcycles	4
Doordash	159	Remington Hotels	3
Capital One	149	Charles River Laboratories	3
Cisco Systems Incorporated	137	California State University	3
Splunk	131	Workbench	2
Intel Corporation	108	Studio Carver Architects	2
Salesforce	107	Spector Corbett Architects	2

Source: Burning Glass

Educational Supply

There are two (2) community colleges in the Bay Region issuing seven (7) awards on average annually (last 3 years ending 2018-19) on TOP 0953.10 - Architectural Drafting. In the SC-Monterey Sub-Region, there is one (1) community college that issued one (1) award on average annually (last 3 years) on this TOP code.

Table 7. Community College Awards on TOP 0953.10 - Architectural Drafting in Bay Region

College	Subregion	Certificate Low	Total
Hartnell	SC-Monterey	1	1
San Francisco	Mid-Peninsula	6	6
Total		7	7

Source: Data Mart

Note: The annual average for awards is 2016-17 to 2018-19.

Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 1,955 annual openings for the Architecture Drafting and Design occupational cluster and 7 annual (3-year average) awards for an annual undersupply of 1,948 students. In the SC-Monterey Sub-Region, there is also a gap with 49 annual openings and 1 annual (3-year average) award for an annual undersupply of 48 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0953.10 - Architectural Drafting

Metric Outcomes	Bay All CTE Programs	Cabrillo All CTE Programs	State 0953.10	Bay 0953.10	SC-Monterey 0953.10	Cabrillo College 0953.10
Students with a Job Closely Related to Their Field of Study	74%	80%	78%	100%	N/A	N/A
Median Annual Earnings for SWP Exiting Students	\$47,419	\$40,665	\$33,868	\$41,058	N/A	N/A
Median Change in Earnings for SWP Exiting Students	23%	23%	38%	10%	N/A	N/A
Exiting Students Who Attained the Living Wage	52%	47%	52%	54%	N/A	N/A

Source: Launchboard Strong Workforce Program Median of 2017 to 2020.

Skills, Certifications and Education

Table 9. Top Skills for Architecture Drafting and Design Occupations in Bay Region (May 2021 - Apr 2022)

Skill	Posting	Skill	Posting
Engineering Management	4,811	Software as a Service (SaaS)	942
Project Management	3,713	Machine Learning	889
Budgeting	2,988	Customer Service	887
Software Engineering	2,789	C++	875
Scheduling	2,491	Project Planning and Development Skills	875
Software Development	2,242	Product Sales	837

Skill	Posting	Skill	Posting
Python	1,785	SQL	837
Product Management	1,605	DevOps	834
Product Development	1,536	Staff Management	798
Java	1,438	JavaScript	794
AutoCAD	1,089	Kubernetes	787
Revit	1,065	Data Science	751
Quality Assurance and Control	1,044	Mechanical Engineering	730
Program Management	965	Scalability Design	703

Source: Burning Glass

Table 10. Certifications for Architecture Drafting and Design Occupations in Bay Region (May 2021 - Apr 2022)

Certification	Posting	Certification	Posting
Driver's License	472	IT Infrastructure Library (ITIL) Certification	77
Project Management Certification	373	Welding Certification	61
Project Management Professional (PMP)	245	EPA CFC/HCFC Certification	54
Licensed Professional Engineer	224	National Council of Architectural Registration Boards (NCARB)	51
Architecture License	173	Certified Cargo Security Professional	49
Security Clearance	127	American Board for Engineering and Technology (ABET) Accredited	45
Registered Architect	118	Information Systems Certification	40
Leadership In Energy and Environmental Design (LEED) Certified	105	Certified Cloud Security Professional (CCSP)	40
Certified Information Systems Security Professional (CISSP)	84	Six Sigma Certification	37
LEED AP	82	Certified ScrumMaster (CSM)	33

Source: Burning Glass

Note: 86% of records have been excluded because they do not include a certification. As a result, the chart above may not be representative of the full sample.

Table 11. Education Requirements for Architecture Drafting and Design Occupations in Bay Region

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	25	0%

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
Associate's degree	37	1%
Bachelor's degree and higher	9,772	99%

Source: Burning Glass

Methodology

Occupations for this report were identified by use of skills listed in O*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCCO Data Mart.

Sources

O*Net Online
 Labor Insight/Jobs (Burning Glass)
 Economic Modeling Specialists International (EMSI)
 CTE LaunchBoard www.calpassplus.org/Launchboard/
 Statewide CTE Outcomes Survey
 Employment Development Department Unemployment Insurance Dataset
 Living Insight Center for Community Economic Development
 Chancellor's Office MIS system

Contacts

For more information, please contact:

- Leila Jamoosian, Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (CoE), leila@baccc.net
- John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, jcarrese@ccsf.edu or (415) 267-6544