

Business Administration: Global Concentration

Inland Empire/Desert Region (Riverside and San Bernardino counties)

This workforce demand report uses state and federal job projection data developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.

Summary

- The community college international business and trade program provides the knowledge, skills, and abilities that lead to five occupations (two community college-level and three bachelor's degree-level). This report's recommendation is based on the community college-level international business and trade occupations.
- The international business and trade community college-level occupations are projected to have 1,731 combined annual job openings, increasing employment by 2% through 2024.
- The 50th percentile hourly earnings for each occupation is between \$27.18 and \$27.97 per hour, above the regional \$21.78 per hour self-sustainable standard for a single adult with one child.
- Two community colleges in the Inland Empire/Desert Region conferred an annual average of 11 annual average awards in international business and trade programs over the last three academic years. One other postsecondary educational institution conferred 25 awards annual average over the previous three academic years.
- The Centers of Excellence recommends expanding international business and trade programs to meet the demand for more workers in the region.

Introduction

California Community College's international business and trade (TOP 0508.00) programs prepare students for employment through instruction related to the principles of managing a business in an international context and of exporting or importing of industrial or consumer goods in world markets. These programs include trade regulations and controls, foreign trade operations, locating markets, negotiation practices, monetary issues, and international law and public relations (Taxonomy of Programs, 2012). The knowledge, skills, and abilities trained by international business and trade programs lead to five occupations, two community college-level, and three bachelor's degree-level occupations.

Community college-level occupations generally require more education than a high school diploma but less than a bachelor's degree. Bachelor's degree-level occupations typically require a four-year degree to

enter employment. These occupations are referred to as the international business occupational group in this report. This report's recommendation only considers community college-level occupations that are likely trained by the international business and trade program. Occupational definitions are available at the end of this report.

- Community College-level Occupations
 - Buyers and Purchasing Agents (SOC 13-1028)
 - Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)

- Bachelor's Degree-level Occupations
 - General and Operations Managers (SOC 11-1021)
 - Project Management Specialists and Business Operations Specialists, All Other (13-1198)
 - Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products (41-4011)

Job Opportunities

In 2019, there were 17,949 community college-level jobs in the international business occupational group in the Inland Empire/Desert Region. By 2024, this occupational group is expected to increase employment by 2% and have 1,731 combined annual job openings to fill new or backfill jobs that workers are permanently vacating (includes occupational transfers and retirements).

Exhibit 1: Five-year projections for community college-level occupations, 2019-2024

Occupation	2019 Jobs	2024 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	14,300	14,632	2%	8,389	1,398	29%
Buyers and Purchasing Agents	3,649	3,652	0%	1,998	333	30%
Total	17,949	18,283	2%	10,387	1,731	29%

Source: Emsi 2021.1

In 2019, there were 33,560 bachelor's degree-level jobs in the international business occupational group. By 2024, this occupational group is expected to increase employment by 6% and have 3,134 annual job

openings to fill new or backfill jobs that workers are permanently vacating (includes occupational transfers and retirements). Exhibit 2 displays five-year projected job growth for the bachelor's degree-level occupations.

Exhibit 2: Five-year projections for bachelor's degree-level occupations, 2019-2024

Occupation	2019 Jobs	2024 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
General and Operations Managers	19,418	20,603	6%	10,320	1,720	24%
Project Management Specialists and Business Operations Specialists, All Other	12,828	13,628	6%	7,698	1,283	26%
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	1,315	1,351	3%	785	131	28%
Total	33,560	35,582	6%	18,802	3,134	25%

Source: Emsi 2021.1

Job Advertisements

A search of online job advertisements (ads) for occupations in the international business group was limited to positions that included the keywords "international," "global," and "trade." Searching online job ads for the international business occupational group in the Inland Empire/Desert Region revealed 1,776 total results over the last 12 months. To ensure generalizable online job ad data was available for *sales representatives, wholesale and manufacturing, technical and scientific products*, the search for this occupation was expanded to include all California ads. Regional job ads accounted for approximately 5% of the 38,862 total statewide job advertisements for the international business occupational group.

Approximately 72% of statewide advertisements were located in the San Francisco Bay area and the Los Angeles-Long Beach-Anaheim metropolitan statistical area.

On average, regional employers fill online job ads for the international business occupational group within 38 days, eight days shorter than the statewide average of 46 days, indicating that local employers may face significantly fewer challenges filling open positions than other California employers. Regional time to fill information is not available for *project management specialists and business operations specialists, all other*. Exhibit 3 displays the number of online job ads posted over the last 12 months, along with the statewide average time to fill for international business positions.

Exhibit 3: Job ads and time to fill

Occupations	Job Ads	Regional Average Time to Fill (Days)	California Average Time to Fill (Days)
Community College-level Occupations			
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	980	38	45
Buyers and Purchasing Agents	115	40	47
Community College-level TOTAL	1,095	78	92
Bachelor's Degree-level Occupations			
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products*	2,580	38	47
General and Operations Managers	475	39	46
Project Management Specialists and Business Operations Specialists, All Other	124	-	49
Bachelor's Degree-level TOTAL	3,179	77	142
OCCUPATIONAL GROUP TOTAL	4,274	38 (Avg)	46 (Avg)

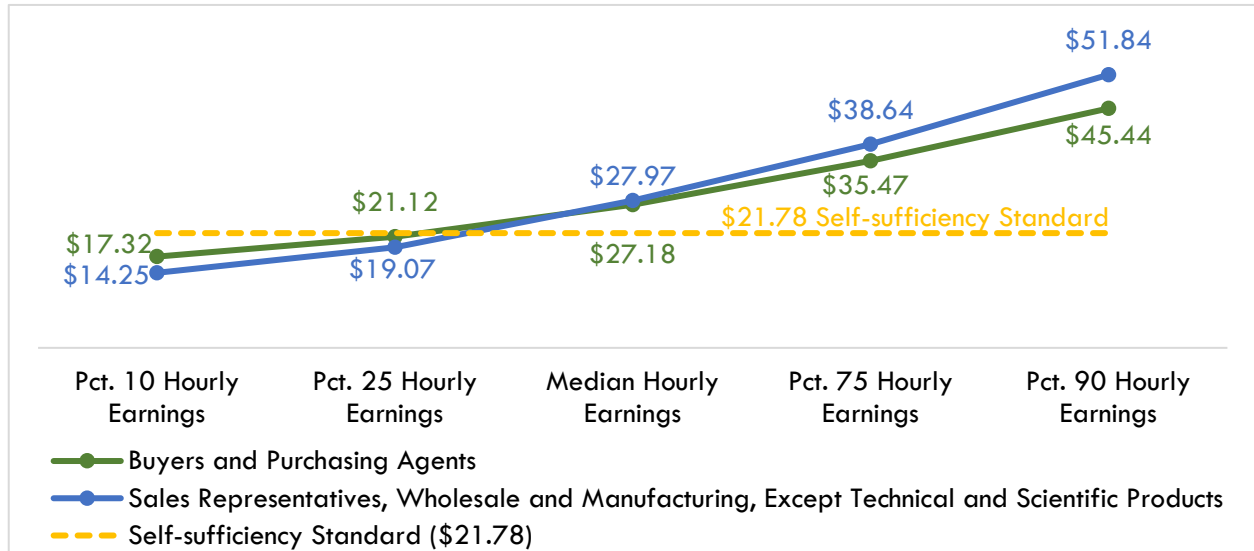
Source: Burning Glass – Labor Insights *Statewide job advertisement data displayed

Earnings and Benefits

Community colleges should ensure their training programs lead to employment opportunities that provide a self-sustainable income level. The Family Needs Calculator estimates that a self-sustainable wage for a single adult with one school-age child is \$21.78 per hour or \$45,992 annually in Riverside County, \$21.24 per hour or \$44,867 annually in San Bernardino County (Pearce, 2020). For this study, the higher hourly wage requirement in Riverside County is adopted as the self-sufficiency standard for the two-county region.

The hourly earnings for the community college-level occupational group surpass the self-sufficiency standard at the 50th percentile, indicating that the top 50% of workers in the field earn a self-sustainable wage. Exhibit 4 displays the community college-level international business occupational group's hourly earnings.

Exhibit 4: Hourly earnings by percentile for community college-level occupations

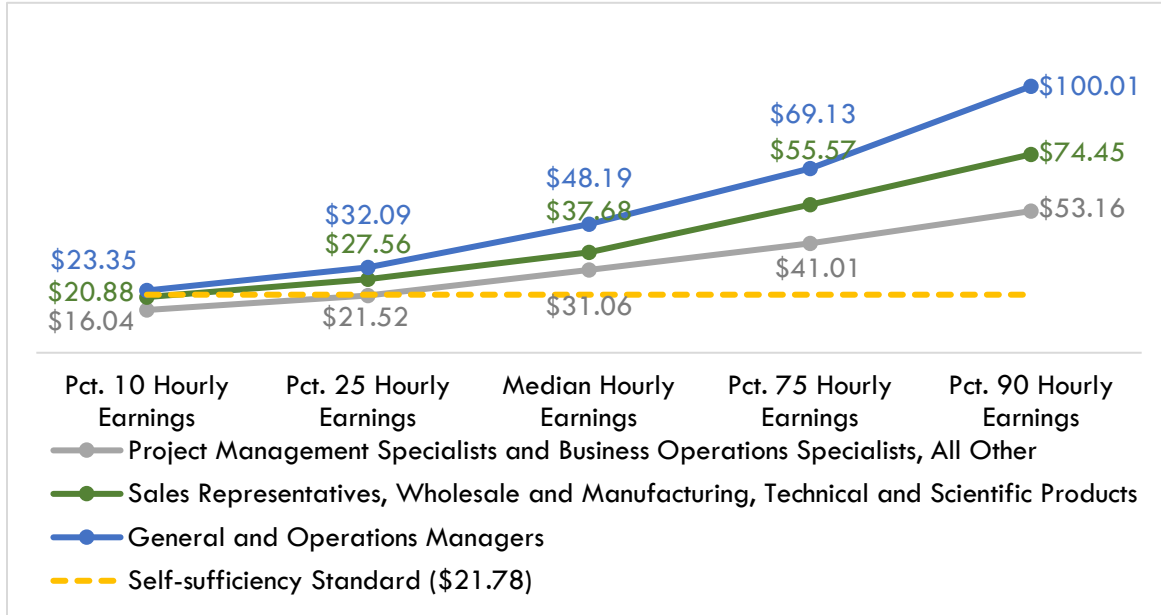


Source: Emsi 2021.1

Exhibit 5: Hourly earnings by percentile for bachelor's degree-level occupations

The hourly earnings for each bachelor's degree-level occupation exceed the self-sufficiency standard at the 50th percentile, indicating that the top 50% of workers in the field earn a self-sustainable wage.

Exhibits 5 displays the earnings for the bachelor's degree-level international business occupational group.



Benefits information is not available for *buyers and purchasing agents* and *project management specialists and business operations specialists, all other*. According to the occupational guides developed by the California Labor Market Information Division, many employers offer workers in the international business occupational group benefits packages that include health insurance (Detailed Occupational Guides, 2020).

Exhibit 6 displays advertised salary data for international business positions listed over the last 12 months. Advertised salary information reveals that employers are willing to pay international business positions between \$46,000 and \$81,000 annually. Advertised wages are above the \$45,992 (\$21.78 hourly) required annually for a family of one adult with a school-age child to be self-sufficient in Riverside County (\$44,867 annually in San Bernardino County). Consider the salary information with caution since only 26% (1,100 out of 4,274) online job advertisements for these occupations provided salary information.

Exhibit 6: Advertised salary information

Occupations	Number of job ads	Real-Time Salary Information				Average Annual Salary
		Less than \$35,000	\$35,000 to \$49,999	\$50,000 to \$74,999	More than \$75,000	
Community College-level Occupations						
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	384	10%	27%	34%	29%	\$65,000
Buyers and Purchasing Agents	38	3%	21%	66%	10%	\$59,000
Bachelor's Degree-level Occupations						
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products*	541	4%	10%	29%	57%	\$81,000
General and Operations Managers	73	1%	21%	44%	34%	\$77,000
Project Management Specialists and Business Operations Specialists, All Other	64	14%	66%	14%	6%	\$46,000

Source: Burning Glass – Labor Insights

*Statewide job advertisement data displayed

Employers, Skills, Education, and Work Experience

Exhibit 7 displays the employers posting the most online job advertisements for the international business occupational group during the last 12 months. Displaying employer names provides some insight into where students may find employment after completing a program.

Exhibit 7: Employers posting the most online job ads

Occupations	Employers	
Community College-level Occupations		
Buyers and Purchasing Agents (n=115)	<ul style="list-style-type: none"> • Esri • Tri Pointe Group, Inc. 	<ul style="list-style-type: none"> • University of California, Riverside • CIRCOR International
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (n=980)	<ul style="list-style-type: none"> • Konica Minolta • Hub International • Senturion • Orkin Incorporated 	<ul style="list-style-type: none"> • Cintas • Esri • Bayer Corporation • All Pro Plumbing Heating
Bachelor's Degree-level Occupations		
General and Operations Managers (n=475)	<ul style="list-style-type: none"> • XPO Logistics • Amazon 	<ul style="list-style-type: none"> • Lennox International • Freeman
Project Management Specialists and Business Operations Specialists, All Other (n=124)	<ul style="list-style-type: none"> • Monarch International • Target • Esri 	<ul style="list-style-type: none"> • Walmart/Sam's • Franklin Energy
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products* (n=2,580)	<ul style="list-style-type: none"> • Thermo Fisher Scientific • IBM • Siemens • Dolcera 	<ul style="list-style-type: none"> • PricewaterhouseCoopers • Danaher Corporation • Syneos Health Commercial Solutions • Microsoft Corporation

Source: Burning Glass – Labor Insights

*Statewide job advertisement data displayed

Exhibit 8 displays a sample of specialized and employability skills employers seek when looking for workers to fill international business positions. Specialized skills are occupation-specific skills that employers are requesting for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is often referred to as "soft skills." The skills requested in job ads may be utilized to guide curriculum development. The software and programming skill, Microsoft Office, represents a suite of Microsoft products, including Excel, Word, PowerPoint, and Outlook. Approximately 30% of job advertisements for the international business occupational group sought candidates with Microsoft Office skills.

Exhibit 8: Sample of in-demand skills from employer online job ads

Occupation	Specialized Skills	Employability Skills
Community College-level Occupations		
Buyers and Purchasing Agents (n=112)	<ul style="list-style-type: none"> Negotiation Skills Project Management Enterprise Resource Planning (ERP) Contract Management 	<ul style="list-style-type: none"> Communication Skills Teamwork/Collaboration Building Effective Relationship Organizational Skills
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (n=964)	<ul style="list-style-type: none"> Customer Service Outside Sales Customer Contact Business Development Business-to-Business 	<ul style="list-style-type: none"> Communication Skills Problem Solving Organizational Skills Building Effective Relationships Teamwork/Collaboration
Bachelor's Degree-level Occupations		
General and Operations Managers (n=465)	<ul style="list-style-type: none"> Budgeting Scheduling Logistics Supervisory Skills Occupational Health and Safety 	<ul style="list-style-type: none"> Communication Skills Planning English Problem Solving Teamwork/Collaboration
Project Management Specialists and Business Operations Specialists, All Other (n=123)	<ul style="list-style-type: none"> E-Commerce Business-to-Business Social Media Operations Management 	<ul style="list-style-type: none"> Communication Skills Organizational Skills Teamwork/Collaboration Creativity
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products* (n=2,556)	<ul style="list-style-type: none"> Customer Service Product Sales Business Development Sales Management 	<ul style="list-style-type: none"> Communication Skills Teamwork/Collaboration Building Effective Relationships Presentation Skills

Source: Burning Glass – Labor Insights

*Statewide job advertisement data displayed

Exhibit 9 displays the entry-level education typically required to enter employment in the international business occupational group according to the Bureau of Labor Statistics (BLS), educational attainment for

incumbent workers with "some college, no degree" and an "associate degree" according to the U.S. Census (2016-17) and the real-time minimum advertised education requirements from employer job ads for international business positions. Job advertisements reveal that employers primarily sought candidates with a bachelor's degree or higher to fill open positions related to international business.

Exhibit 9: Typical entry-level education, educational attainment, and minimum advertised education requirements

Occupation	Typical Entry-Level Education Requirement	CC-Level Educational Attainment*	Real-Time Minimum Advertised Education Requirement			
			Number of Job Ads	High school diploma or vocational training	Associate degree	Bachelor's degree or higher
Community College-level Occupations						
Buyers and Purchasing Agents	Bachelor's degree	34%	84	17%	6%	77%
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	High school diploma or equivalent	32%	689	38%	6%	56%
Bachelor's Degree-level Occupations						
General and Operations Managers	Bachelor's degree	34%	420	19%	5%	76%
Project Management Specialists and Business Operations Specialists, All Other	Bachelor's degree	22%	88	31%	6%	63%
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products**	Bachelor's degree	32%	1,954	14%	3%	83%

Source: Emsi 2021.1, Burning Glass – Labor Insights

* Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework

**Statewide job advertisement data displayed

Exhibit 10 displays the work experience typically required for the international business occupational group and the real-time work experience requirements from employer job ads for international business positions.

Exhibit 10: Work experience required and real-time work experience requirements

Occupation	Work Experience Typically Required	Real-Time Work Experience			
		Number of Job Ads	0 – 2 years	3 – 5 years	6+ years
Community College-level Occupations					
Buyers and Purchasing Agents	None	92	46%	44%	10%
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	None	584	55%	36%	9%
Bachelor's Degree-level Occupations					
General and Operations Managers	5 years or more	409	24%	49%	27%
Project Management Specialists and Business Operations Specialists, All Other	None	89	37%	54%	9%
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products*	None	1,866	25%	51%	24%

Source: Emsi 2021.1, Burning Glass – Labor Insights

*Statewide job advertisement data displayed

Student Completions and Program Outcomes

Exhibit 11 displays the annual average awards for international business and trade (TOP 0508.00) programs in the Inland Empire/Desert Region. International business and trade programs cover various topics ranging from logistics and importing/exporting to public relations and international law. Chaffey's international business program concentrates on business law and international marketing, while Riverside City's program provides introductory courses that prepare students to enter the global business environment. Please consider the differences between programs when assessing the completion information from regional community colleges.

Exhibit 11: 2017-20, Annual average community college awards for the international business and trade programs in the Inland Empire/Desert Region

0508.00 – International Business and Trade	Associate degree	Certificate requiring 16 to <30 semester units	Certificate requiring 8 to <16 semester units	Certificate requiring 6 to <18 semester units	Total CC Annual Average Awards, Academic Years 2017-2020
Chaffey	2	1	-	-	3
Riverside	-	-	1	7	8
Total	2	1	1	7	11

Source: MIS Data Mart

California program outcome data may provide a useful insight into the likelihood of success for the proposed program. Community college student outcome information based on the selected TOP code and region is provided in Exhibit 12. The outcome methodology is available in the appendix section of this report. Dashes indicate there were too few students to obtain program outcome information.

Exhibit 12: 0508.00 – International business and trade strong workforce program outcomes

Strong Workforce Program Metrics: 0508.00 – International Business and Trade Academic Year 2017-18, unless noted otherwise	Inland Empire/Desert Region	California
Unduplicated count of enrolled students (2018-19)	198	2,677
Completed 9+ career education units in one year (2018-19)	38%	43%
Perkins Economically disadvantaged students (2018-19)	88%	81%
Students who earned a degree, certificate, or attained apprenticeship (2018-19)	-	54
Transferred to a four-year institution (transfers)	-	133
Job closely related to the field of study (2016-17)	-	66%
Median annual earnings (all exiters)	\$24,164	\$32,152

Strong Workforce Program Metrics: 0508.00 – International Business and Trade Academic Year 2017-18, unless noted otherwise	Inland Empire/Desert Region	California
Median change in earnings (all exiters)	26%	39%
Attained a living wage (completers and skills-builders)	48%	51%

Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

Exhibit 13 displays international business and trade awards conferred outside the community college system. Completion data is compiled from the Integrated Postsecondary Education Data System (IPEDS) for the most recent three years available. These programs awarded 25 annual average awards. Due to IPEDS reporting limitations, it is assumed that each award represents a qualified worker since it is unknown if students are earning multiple awards from this program.

Exhibit 13: Annual average other educational program student completions for international business/trade/commerce programs in the Inland Empire/Desert Region

52.1101 – International Business/Trade/Commerce (CIP Program)	Bachelor's Degree	Other Educational Institutions Annual Average Certificates or Other Credit Awards (2014-17)
University of Redlands	25	25
Total annual average other awards	25	25

Source: IPEDS

Recommendation

The community college international business and trade program provides the knowledge, skills, and abilities that lead to five occupations (two community college-level and three bachelor's degree-level). This report's summary and recommendation is based on the international business and trade community college-level occupations; buyers and purchasing agents and sales representatives, wholesale and manufacturing, except technical and scientific products.

The combined community college-level international business and trade occupations are expected growth by 2% and have 1,731 annual job openings; sales representatives, wholesale and manufacturing, except technical and scientific products are expected to have 1,398 annual job openings, and buyers and purchasing agents are expected to have 333 annual job openings. The 50th percentile hourly earnings for each community college-level occupation is between \$27.18 and \$27.97 per hour, above the regional \$21.78 per hour self-sustainable standard for a single adult with one child.

Two regional community colleges conferred an annual average of 11 awards in international business and trade programs over the last three academic years. One other postsecondary educational institution conferred 25 awards in a related program in the previous three academic years.

The Centers of Excellence recommends expanding international business and trade programs to meet the demand for more workers in the region. Students willing to earn a bachelor's degree in a related international business and trade program will open themselves to more job opportunities. Please review this report's skills sections (Exhibit 8) to ensure students are gaining the necessary education outcomes to meet employer demand.

Contact

Michael Goss & Paul Vaccher
Centers of Excellence, Inland Empire/Desert Region
michael.goss@chaffey.edu
March 2021

References

- Burning Glass Technologies. (2021). *Labor Insights/Jobs*. Retrieved from <https://www.burning-glass.com/>
- California Community Colleges Chancellor's Office. LaunchBoard. (2021). *California Community Colleges LaunchBoard*. Retrieved from <https://www.calpassplus.org/Launchboard/Home.aspx>
- California Community Colleges Chancellor's Office. LaunchBoard. (2021 a). *Strong Workforce Program Metrics Data Element Dictionary*. Pg. 3. Retrieved from <https://www.calpassplus.org/MediaLibrary/calpassplus/launchboard/Documents/SWP-DED.PDF>
- California Community Colleges Chancellor's Office. (2021). *Chancellor's Office Curriculum Inventory (COCI), version 3.0*. Retrieved from <https://coci2.ccctechcenter.org/programs>
- California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart. (2021). *Data Mart*. Retrieved from <https://datamart.cccco.edu/datamart.aspx>
- California Community Colleges Chancellor's Office, Curriculum and Instructional Unit, Academic Affairs Division. (2012). *Taxonomy of Programs, 6th Edition, Corrected Version*. Retrieved from <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Digital-Innovation-and-Infrastructure/Research/Files/TOPmanual6200909corrected12513.ashx?la=en&hash=94C709CA83C0380828415579395A5F536736C7C1>
- Carnevale, A. P., Jayasundera, T., & Repnikov, D. (n.d.). *Understanding Online Job Ads Data*. Retrieved from <https://cew.georgetown.edu/wp-content/uploads/2014/11/OCLM.Tech.Web.pdf>
- Economic Modeling Specialists International (Emsi). (2021). *Datarun 2021.1*. Retrieved from <https://www.economicmodeling.com/>
- Integrated Postsecondary Education Data System (IPEDS). *Data Center*. Retrieved from <http://nces.ed.gov/ipeds/datacenter>

Labor Market Information Division. Employment Development Department of California. (2021). *Detailed Occupational Guides*. Retrieved from <https://www.labormarketinfo.edd.ca.gov/OccGuides/Search.aspx>

National Center for O*NET Development. (2021). *O*NET OnLine*. Retrieved from <https://www.onetonline.org/>

Pearce, D. University of Washington. (2020). *Self Sufficiency Standard – California*. Retrieved from <http://www.selfsufficiencystandard.org/california>

Appendix: Occupation definitions, sample job titles, five-year projections for global business administration occupations

General and Operations Managers (11-1021)

Plan, direct, or coordinate the operations of public or private sector organizations, overseeing multiple departments or locations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. Usually manage through subordinate supervisors. Excludes First-Line Supervisors.

Sample job titles: Business Manager, General Manager (GM), Operations Director, Operations Manager, Plant Superintendent, Store Manager

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 34%

Buyers and Purchasing Agents (13-1028)

Purchase goods or services for further processing, resale, or to enable operation of an establishment. May analyze past buying trends, sales records, price, and quality of goods or services. May select, order, and authorize payment according to contractual agreements. May conduct meetings with sales personnel and introduce new products. Includes wholesale and retail buyers and purchasing agents for farm products, equipment, and raw materials.

Sample job titles: Buyer, Grocery Buyer, Procurement Specialist, Purchaser, Purchasing Coordinator, Retail Buyer, Trader, Procurement Official, Procurement Specialist, Purchasing Administrator, Purchasing Agent

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: Between one and twelve months on-the-job training

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 34%

Project Management Specialists and Business Operations Specialists, All Other (13-1198)

Analyze and coordinate the schedule, timeline, procurement, staffing, and budget of a product or service on a per project basis. Lead and guide the work of technical staff. May serve as a point of contact for the client or customer.

Sample job titles: Business Continuity Specialist, Customs Broker, Sustainability Specialist, Security Consultant, Wholesale Representative

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 22%

Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products (41-4011)

Sell goods for wholesalers or manufacturers where technical or scientific knowledge is required in such areas as biology, engineering, chemistry, and electronics, normally obtained from at least 2 years of postsecondary education.

Sample job titles: Inside Sales Representative, Marketing Representative, Sales Representative

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: Between one and twelve months on-the-job training

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 32%

Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)

Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.

Sample job titles: Account Representative, Customer Account Technician, Inside Sales Person, Outside Sales Representative, Route Sales Representative, Sales Consultant, Sales Professional, Sales Representative (Sales Rep), Salesman, Salesperson

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: Between one and twelve months on-the-job training

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 32%

Appendix: Program Completion and Outcome Methodology

Exhibit 13 displays the average annual California Community College (CCC) awards conferred during the three academic years between 2017 and 2020, from the California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart. Awards are the combined total of associate degrees and certificates issued during the timeframe, divided by three in this case to calculate an annual average. This is done to minimize the effect of atypical variation that might be present in a single year.

Community college student outcome information is from LaunchBoard and based on the selected TOP code and region. These metrics are based on records submitted to the California Community Colleges Chancellor's Office Management Information Systems (MIS) by community colleges, which come from self-reported student information from CCC Apply and the National Student Clearinghouse. Employment and earnings metrics are sourced from records provided by California's Employment Development Department's Unemployment Insurance database. When available, outcomes for completers are reported to demonstrate the impact that earning a degree or certificate can have on employment and earnings. For more information on the types of students included for each metric, please see the web link for LaunchBoard's Strong Workforce Program Metrics Data Element Dictionary in the References section (LaunchBoard, 2021a). Finally, employment in a job closely related to the field of study comes from self-reported student responses on the CTE Employment Outcomes Survey (CTEOS), administered by Santa Rosa Junior College (LaunchBoard, 2021a).

Job advertisement data is limited to the information provided by employers and the ability of artificial intelligence search engines to identify this information. Additionally, preliminary calculations by Georgetown Center on Education and the Workforce found that "just 30 to 40 percent of openings for candidates with some college or an associate degree, and only 40 to 60 percent of openings for high school diploma holders appear online" (Carnevale et al., 2014). Online job advertisements often do not reveal the hiring intentions of employers; it is unknown if employers plan to hire one or multiple workers from a single online job ad, or if they are collecting resumes for future hiring needs. A closed job ad may not be the result of a hired worker.

Table 1: 2019 to 2024 job growth, wages, education, training, and work experience required, Inland Empire/Desert Region

Occupation (SOC)	2019 Jobs	5-Yr Change	5-Yr % Change	Annual Openings (New + Replacement Jobs)	Entry-Experienced Hourly Wage Range (10 th to 90 th percentile)	Median Hourly Wage (50 th percentile)	Average Annual Earnings	Typical Entry-Level Education & On-The-Job Training Required	Work Experience Required
General and Operations Managers (11-1021)	19,418	1,185	6%	1,720	\$23.35 to \$100.01	\$48.19	\$117,200	Bachelor's degree & None	5 years or more
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	14,300	331	2%	1,398	\$14.25 to \$51.84	\$27.97	\$69,000	High school diploma or equivalent & 1-12 months	None
Project Management Specialists and Business Operations Specialists, All Other (13-1198)	12,828	801	6%	1,283	\$16.04 to \$53.16	\$31.06	\$69,700	Bachelor's degree & None	None
Buyers and Purchasing Agents (13-1028)	3,649	3	0%	333	\$17.32 to \$45.44	\$27.18	\$61,000	Bachelor's degree & 1-12 months	None
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products (41-4011)	1,315	36	3%	131	\$20.88 to \$74.45	\$37.68	\$91,100	Bachelor's degree & 1-12 months	None
Total	51,509	2,356	5%	4,865	-	-	-	-	-

Source: Emsi 2021.1