

REVISED Program Endorsement Brief: 0505.00/Business Administration Business Economics

Orange County Center of Excellence, April 2020

Summary Analysis

The Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to business economics. The proposed Business Economics Certificate is designed to train students in foundational business economics skills that can be applied to a variety of middle-skill business occupations. These foundational skills can lead to future employment in a number of middle-skill occupations and, with additional education and training, above middle-skill occupations.

To better understand the occupations students would be able to enter upon successful completion of this certificate, this report provides supply and demand data for seven middle-skill occupations: Cost Estimators (SOC 13-1051), Credit Counselors (SOC 13-2071), Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (SOC 41-4012), Bill and Account Collectors (43-3011), Payroll and Timekeeping Clerks (43-3051), Tellers (43-3071), and Customer Service Representatives (43-4051). Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.¹ Although Cost Estimators typically requires a bachelor's degree, it is considered middle-skill because approximately one-third of workers in the field have completed some college or an associate degree.

In addition to traditional labor market data, it is important to consider the skills employers request in online job postings so colleges can align their programs with in-demand skills. This report includes an analysis of the knowledge, skills, and abilities (KSAs) requested in online job postings for these business economics occupations. Analyzing job postings for business economics roles will provide a better understanding of the local need for qualified workers, the skills requested for these roles, and educational requirements and preferences. This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data there appears to be a supply gap for these middle-skill business economics occupations in the region. However, typical entry-level wages for some occupations are lower than the living wage estimate in both counties. Additionally, median wages for Tellers are lower than the living wage in both counties; in Orange County, experienced wages for Tellers are also below the living wage. **Therefore, the COE cautiously endorses this proposed program.** Reasons include:

¹ The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

Demand²:

- Over the next five years, there is projected to be **23,089 jobs available annually** in the region due to retirements and workers leaving the field, **which is more than the 20,459 awards conferred annually** by educational institutions in the region.
- **Typical entry-level hourly wages** for these occupations range from **\$13.21 to \$23.77 in Los Angeles County and \$12.62 to \$25.84 in Orange County.**
 - In Los Angeles County, **typical entry-level hourly wages for two occupations, Tellers and Customer Service Representatives, are lower than the California Family Needs Calculator hourly wage (living wage)** for one adult in the county (\$15.04 in Los Angeles County).³
 - In Orange County, typical entry-level hourly wages for three occupations, **Bill and Account Collectors, Tellers and Customer Service Representatives, are lower than the living wage** for one adult in the county (\$17.36 in Orange County)
 - In Orange County, **experienced hourly wages for Tellers are lower than the living wage.**
 - **All occupations, with the exception of Tellers, have median wages above the living wage in both counties.**
- The national-level educational attainment data indicates **between 31.3% and 47.1% of workers in the field have completed some college or an associate degree.**
- Over the past 12 months, there were **120,004 online job postings related to these business economics occupations.** The highest number of job postings were for customer service representative, sales representative, and account manager.
 - Of those, **86.6% (103,915) were for customer service and sales positions.**
 - **The KSAs requested in online job postings vary widely across three groups of occupations:** accounting and analysis, banking and finance, and customer service and sales.

Supply:

- All **28 community colleges plus one noncredit school** in the region have programs related to these business economics occupations, conferring an average of **9,848 awards annually** between 2016 and 2019.
- Between 2013 and 2016, there were an average of **10,611 awards conferred annually** in related training programs by non-community college institutions, all of which were generated by **30 individual four-year colleges throughout** the region.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for these business economics occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is

² This workforce demand report uses state and federal job projection data that was 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.

³ Living wage data was pulled from California Family Needs Calculator on 4/17/20. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

projected to increase decrease by 1% through 2023. However, there will be more than 23,000 job openings per year through 2023 due to retirements and workers leaving the field.

This report includes employment projection data by Emsi which uses EDD information. Emsi's projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy, during the projection period, will be at approximately full employment. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, it may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the impacts of COVID-19 into account.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties⁴

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	135,065	132,636	(2,429)	(2%)	16,116
Orange	57,124	57,203	79	0.13%	6,973
Total	192,189	189,839	(2,350)	(1%)	23,089

Wages—Typical entry-level hourly wages for these business economics occupations throughout Los Angeles County are between \$13.21 and \$23.77. Entry-level wages for two occupations, Tellers and Customer Service Representatives are below the living wage for one adult in Los Angeles County (\$15.04). All occupations, with the exception of Tellers, have median hourly wages above the living wage estimate. Experienced hourly wages for these occupations are between \$17.54 and \$42.89.

In Orange County, typical entry-level hourly wages for these occupations are between \$12.62 and \$25.84. Entry-level wages for three occupations, Bill and Account Collectors, Tellers, and Customer Service Representatives, are below the living wage for one adult in Orange County. All occupations, with the exception of Tellers, have median and experienced hourly wages above the living wage estimate. Experienced hourly wages for these occupations are between \$16.75 and \$46.33; experienced hourly wages for Tellers are \$16.75, which is below the living wage. Regional average wages are below the average statewide wage of \$25.92. Wage information, by county, is included in Appendix A

Job Postings

This section analyzes the educational requirements and skills for online job postings for the business economics occupations in this report to better understand the educational requirements and skills employers include in postings for these positions. It is important to note that the job postings data included in this section reflects online job postings listed in the past 12 months and does not yet demonstrate the impact of COVID-19. While employers have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.

⁴ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Because these occupations involve different business operations, they have been split into three groups: Accounting and Analysis, Banking and Financial, and Customer Service and Sales. Exhibit 2 shows the occupations included in each group.

Exhibit 2: Occupational groupings used in job postings analysis

Group	SOC Code	Description
Accounting and Analysis	43-3051	Payroll and Timekeeping Clerks
	13-1051	Cost Estimators
Banking and Financial	13-2071	Credit Counselors
	43-3011	Bill and Account Collectors
	43-3071	Tellers
Customer Service and Sales	41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
	43-4051	Customer Service Representatives

Over the past 12 months, there were 120,004 online job postings related to these business economics occupations. The highest number of job postings were for the Customer Service and Sales group (86.6%, 103,915 postings), followed by the Accounting and Analysis group (7.3%, 8,746 postings), and the Banking and Financial group (6.12%, 7,343 postings). The top skills across all three groups were customer service, sales, customer contact, scheduling, prospective clients, outside sales, produce sales, and sales goals. Since 86.6% of all postings were for the Customer Service and Sales group, the skills across all three groups primarily reflect customer service and sales skills. Of the 120,004 online job postings, 51% listed a minimum education requirement.

Educational Attainment and Educational Requirements in Online Job Postings by Group

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for five of these business administration occupations: Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products, Bill and Account Collectors, Payroll and Timekeeping Clerks, Tellers, and Customer Service Representatives. The typical entry-level education for Cost Estimators and Credit Counselors is a bachelor’s degree. The national-level educational attainment data indicates between 31.3% and 47.1% of workers in the field have completed some college or an associate degree.

Accounting and Analysis Occupational Group—Of the 8,746 postings for the Accounting and Analysis group of occupations, 49% (4,312) listed a minimum education requirement. Of those, 42.2% (1,821) requested a high school diploma, vocational training, or an associate degree and more than half, 57.8% (2,491), requested a bachelor’s degree. Postings that requested a high school diploma, vocational training, or an associate degree were primarily for entry and mid-level payroll and estimator roles. The top titles were estimator, payroll specialist, payroll clerk, payroll coordinator and payroll assistant. Postings that requested a bachelor’s degree included those roles, but also included higher level estimating and analyst roles such as cost analyst, payroll analyst, and project estimator.

Banking and Finance Occupational Group—Of the 7,343 postings for the Banking and Finance group of occupations, 48% (3,559) listed a minimum education requirement. Of those, 78% (2,780) requested a high school diploma, vocational training, or an associate degree and 22% (779) requested a bachelor's degree. Postings that requested a high school diploma, vocational training, or an associate degree were for tellers, collections specialists, and medical collections positions. Postings that requested a bachelor's degree included those roles as well as higher level roles such as financial aid counselors and officer, account manager, and credit collections coordinator.

Customer Service and Sales Occupational Group— Of the 103,915 postings for the Customer Service and Sales group of occupations, 51% (52,785) listed a minimum education requirement. Of those, 57% (30,055) requested a high school diploma, vocational training, or an associate degree and 43% (22,730) requested a bachelor's degree. Postings that requested a high school diploma, vocational training, or an associate degree were primarily for entry and mid-level customer service and sales positions. The top titles were customer service representative, sales representative, outside sales representative, and customer service associate. Postings that requested a bachelor's degree included those roles, but also included higher level roles such as account manager, account executive, sales specialist, and sales executive.

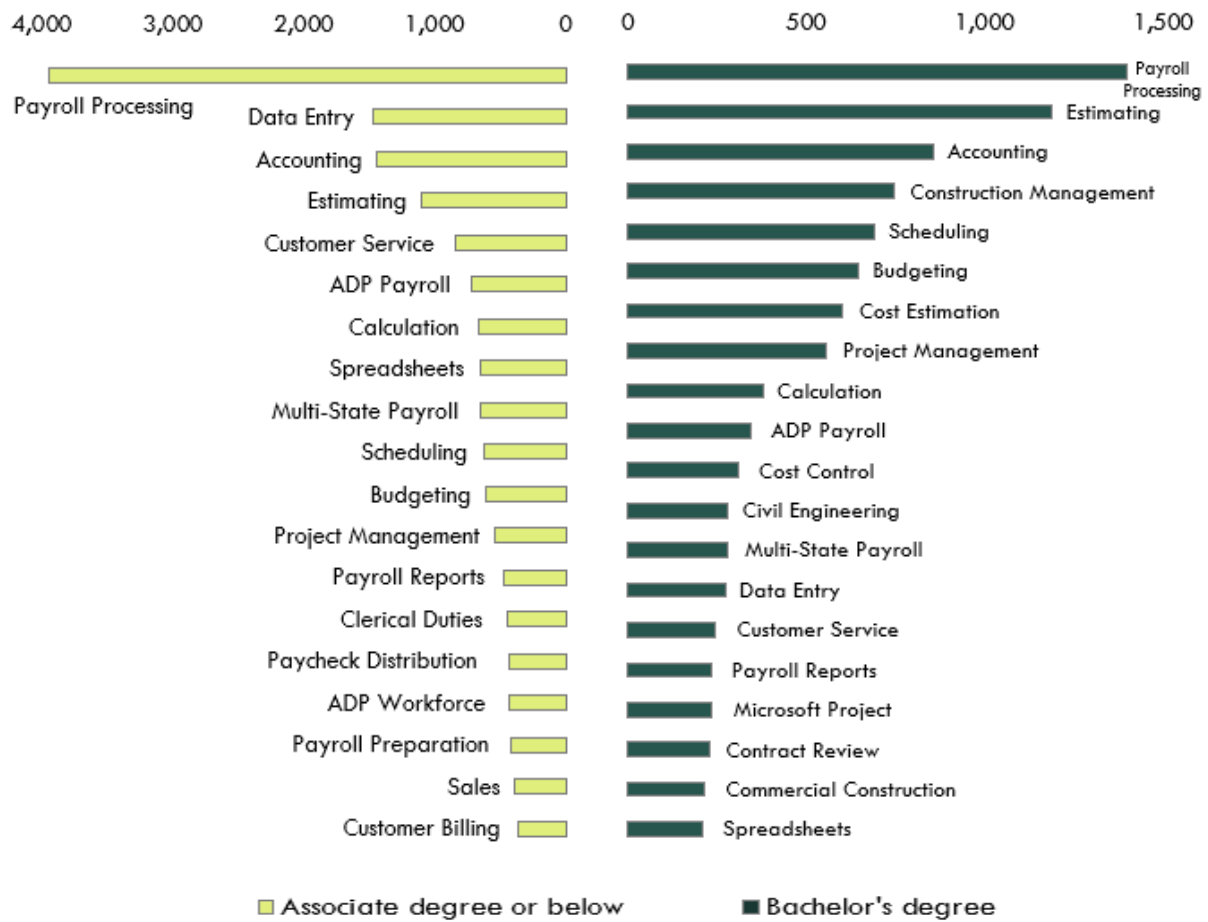
Skills in Online Job Postings by Group

Because this program provides students with foundational business economics skills that can lead to employment in a variety of occupations, it is important to consider the skills requested in online job postings by education level. Analyzing skills by education level provides a better understanding of the skills employers request for entry-level positions versus those they request for mid-level positions.

Accounting and Analysis Skills Requested in Online Job Postings by Education Level—

Comparing skills for the Accounting and Analysis group of occupations shows that there are several similar skills requested for both entry-level and mid-level positions, including payroll processing, accounting, and estimating. However, postings that request a bachelor's degree request project management skills such as construction management, cost estimation, cost control, and Microsoft Project. These skills are not included or included less frequently in postings that request an associate degree or less. Additionally, some skills included in postings that request an associate degree or less request skills such as data entry, calculation, and clerical duties, are not included in the top skills for postings that request a bachelor's degree. Exhibit 3, on the following page, shows the top 20 requested accounting and analysis skills by education level.

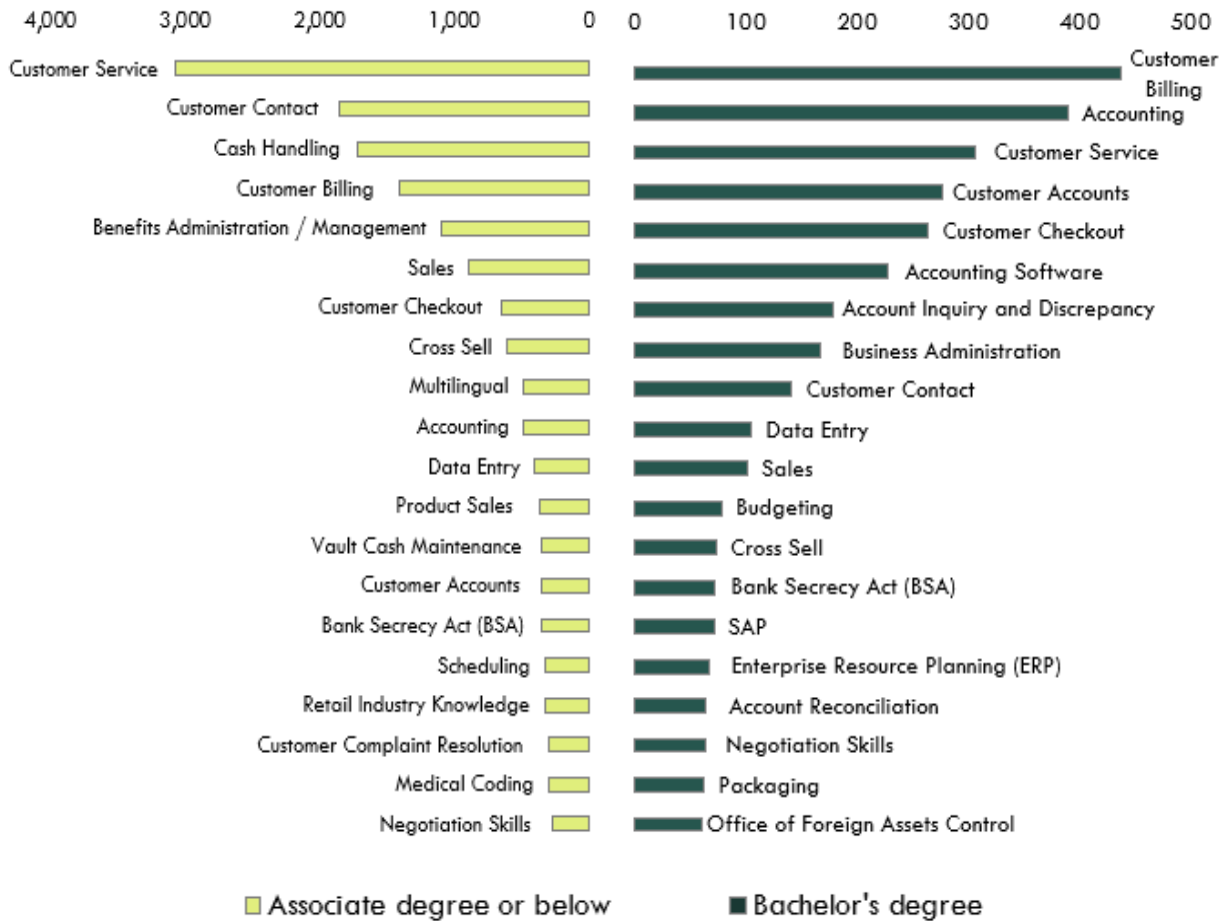
Exhibit 3: Top 20 accounting and analysis skills in online job postings by education level



Banking and Finance Skills Requested in Online Job Postings by Education Level—

Comparing skills for the Banking and Finance group of occupations shows that there are several similar skills requested for both entry-level and mid-level positions, including customer service, accounting, and data entry. However, postings that request a bachelor's degree request customer account skills such as account inquiry and discrepancy and account reconciliation. These postings also request knowledge of accounting software tools, such as SAP, and enterprise resource planning skills, suggesting that these roles are more involved with hands-on business administration. Additionally, some skills included in postings that request an associate degree or less also request skills such as cash handling, multilingual, and customer complaint resolution suggest that these positions are more customer-facing. Exhibit 4, on the following page, shows the top 20 requested accounting and analysis skills by education level.

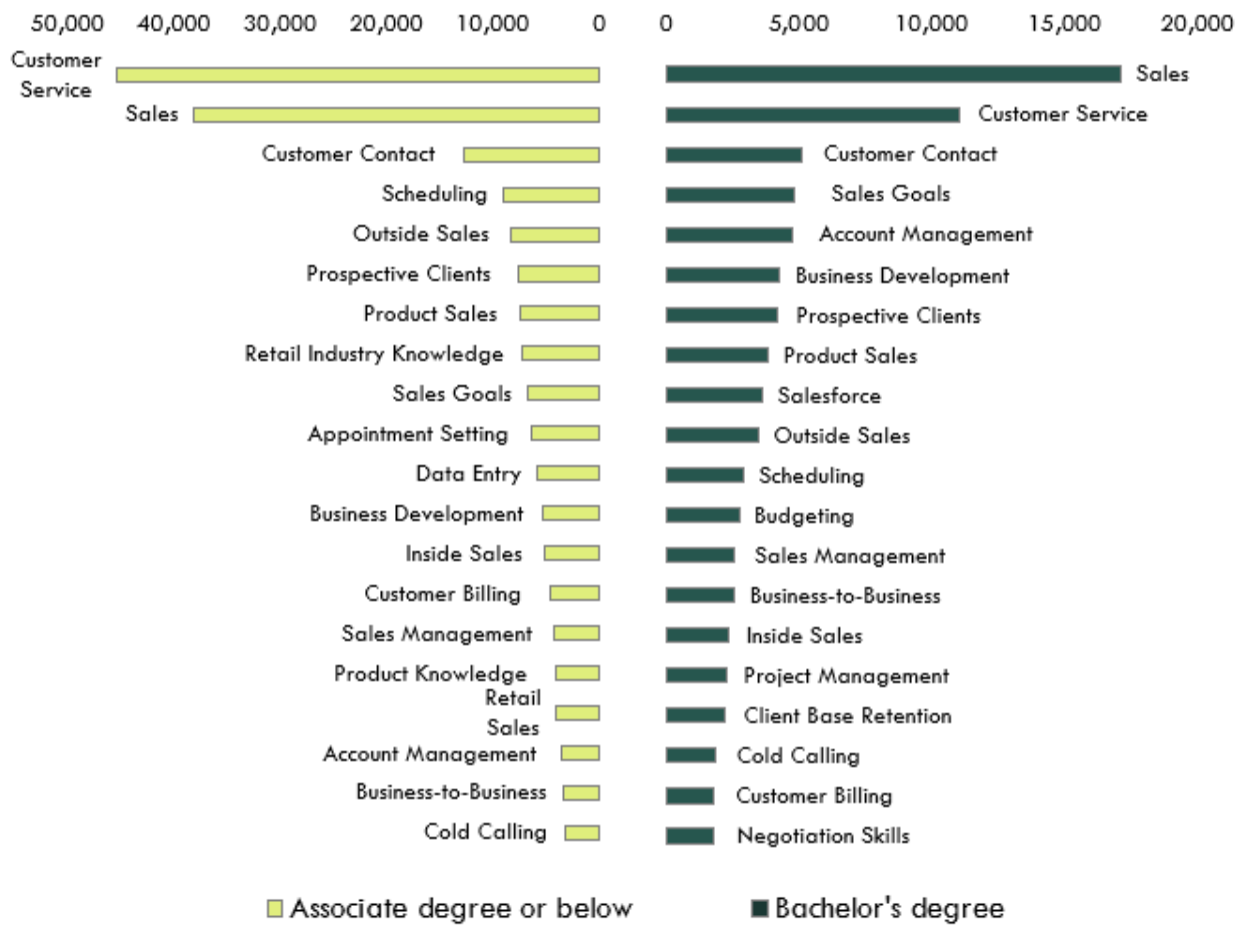
Exhibit 4: Top 20 banking and finance skills in online job postings by education level



Customer Service and Sales Skills Requested in Online Job Postings by Education Level—

Comparing skills for the Customer Service and Sales group of occupations shows that there are several similar skills requested for both entry-level and mid-level positions, including customer service, accounting, and data entry. However, there are some skills in postings that request a bachelor’s degree that are not included in postings that request an associate degree or less. These skills include Salesforce, project management, and client base retention, suggesting that these positions could be more involved with sales strategy. Postings that request an associate degree or less tend to request skills such as retail industry knowledge and retail sales, suggesting that these positions are more closely related to retail positions. Exhibit 5, on the following page, shows the top 20 requested accounting and analysis skills by education level.

Exhibit 5: Top 20 banking and finance skills in online job postings by education level



Supply

Community College Supply—Exhibit 6 shows the three-year average number of awards conferred by community colleges in the TOP codes that train for these business administration occupations: Business and Commerce, General (0501.00), Accounting (0502.00), Banking and Finance (0504.00), Business Administration (0505.00), Business Management (0506.00), Marketing and Distribution (0509.00), and Customer Service (0518.00). The program with the most completions in the region was Business Administration (6,398 awards). Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

Exhibit 6: Regional community college awards (certificates and degrees), 2016-2019

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
0501.00	Business and Commerce, General	Cerritos	23	39	41	34
		Compton	47	1	-	16
		Glendale	47	48	40	45
		LA City	21	113	157	97

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
		LA Harbor	20	8	13	14
		LA Mission	38	29	9	25
		LA Pierce	-	-	5	2
		LA Swest	48	20	30	33
		Long Beach	69	93	130	97
		Mt San Antonio	183	161	209	184
		Santa Monica	-	-	1	0
		West LA	38	8	5	17
		LA Subtotal	534	520	640	565
		Coastline	-	5	5	3
		Golden West	7	-	-	2
		Saddleback	14	8	14	12
		OC Subtotal	21	13	19	18
		Subtotal/Average	555	533	659	582
0502.00	Accounting	Cerritos	25	26	29	27
		Citrus	16	20	18	18
		Compton	4	-	1	2
		East LA	346	397	635	459
		El Camino	15	8	16	13
		Glendale	55	52	63	57
		LA City	17	16	5	13
		LA Harbor	8	4	8	7
		LA Mission	10	8	8	9
		LA Pierce	12	5	29	15
		LA Swest	2	-	1	1
		LA Trade	25	26	21	24
		LA Valley	80	45	34	53
		Long Beach	27	36	42	35
		Mt San Antonio	103	114	174	130
		Pasadena	20	30	23	24
		Rio Hondo	11	17	14	14
		Santa Monica	52	169	78	100
		West LA	17	7	15	13
		LA Subtotal	845	980	1,214	1,013
		Coastline	63	43	49	52
		Cypress	4	5	8	6
		Fullerton	14	18	17	16

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
		Golden West	17	19	36	24
		Irvine	169	142	201	171
		Orange Coast	22	112	104	79
		Saddleback	42	32	38	37
		Santa Ana	95	86	198	126
		Santiago Canyon	6	55	7	23
		OC Subtotal	432	512	658	534
		Subtotal/Average	1,277	1,492	1,872	1,547
0504.00	Banking and Finance	Citrus	1	6	8	5
		Glendale	4	2	1	2
		LA City	3	5	9	6
		LA Mission	1	1	-	1
		LA Pierce	-	-	1	0
		LA Swest	2	-	2	1
		LA Valley	35	26	34	32
		Pasadena	3	8	5	5
		LA Subtotal	49	48	60	52
		Subtotal/Average	49	48	60	52
0505.00	Business Administration	Cerritos	197	181	206	195
		Citrus	393	434	349	392
		Compton	-	44	49	31
		East LA	26	159	227	137
		El Camino	282	310	295	296
		Glendale	193	246	216	218
		LA City	51	85	84	73
		LA Harbor	66	90	83	80
		LA Mission	52	60	51	54
		LA Pierce	180	181	211	191
		LA Swest	32	22	35	30
		LA Valley	23	99	131	84
		Long Beach	243	273	375	297
		Mt San Antonio	9	135	248	131
		Pasadena	702	847	909	819
		Rio Hondo	206	216	241	221
		Santa Monica	306	335	297	313
		West LA	96	135	120	117
		LA Subtotal	3,057	3,852	4,127	3,679

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
		Coastline	817	681	763	754
		Cypress	202	213	228	214
		Fullerton	210	358	374	314
		Golden West	176	126	187	163
		Irvine	218	233	306	252
		Orange Coast	382	393	381	385
		Saddleback	217	278	297	264
		Santa Ana	211	216	217	215
		Santiago Canyon	164	152	159	158
		OC Subtotal	2,597	2,650	2,912	2,720
		Subtotal/Average	5,654	6,502	7,039	6,398
0506.00	Business Management	Cerritos	246	405	456	369
		Citrus	-	1	2	1
		Compton	11	2	3	5
		East LA	9	26	29	21
		El Camino	17	23	23	21
		Glendale	17	10	9	12
		LA City	19	15	18	17
		LA Mission	5	4	3	4
		LA Pierce	-	-	3	1
		LA Valley	42	30	33	35
		Long Beach	15	22	21	19
		Mt San Antonio	187	161	202	183
		Santa Monica	10	18	23	17
		LA Subtotal	578	717	825	707
		Coastline	175	71	84	110
		Cypress	2	6	6	5
		Fullerton	124	11	11	49
		Golden West	9	8	20	12
		Irvine	11	9	3	8
		North Orange Adult	26	24	27	26
		Orange Coast	3	51	40	31
		Santa Ana	37	81	64	61
		Santiago Canyon	3	42	17	21
		OC Subtotal	390	303	272	322
		Subtotal/Average	968	1,020	1,097	1,028

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
0509.00	Marketing and Distribution	Cerritos	-	11	25	12
		Compton	4	1	1	2
		East LA	1	4	9	5
		El Camino	18	13	14	15
		Glendale	3	-	1	1
		LA City	14	10	12	12
		LA Harbor	2	-	-	1
		LA Mission	1	2	-	1
		LA Pierce	4	8	4	5
		LA Trade	5	10	3	6
		LA Valley	10	16	28	18
		Long Beach	11	15	6	11
		Mt San Antonio	5	3	5	4
		Pasadena	-	-	3	1
		Rio Hondo	5	8	2	5
		Santa Monica	5	20	20	15
		West LA	1	3	1	2
		LA Subtotal	89	124	134	116
		Cypress	5	4	4	4
		Fullerton	1	-	2	1
		Golden West	1	3	2	2
		Orange Coast	7	107	83	66
		Saddleback	3	10	16	10
		Santa Ana	1	-	3	1
		Santiago Canyon	7	24	17	16
		OC Subtotal	25	148	127	100
		Subtotal/Average			114	272
0518.00	Customer Service	East LA	13	30	17	20
		Santa Monica	-	-	3	1
		LA Subtotal	13	30	20	21
		Santiago Canyon	-	6	3	3
		OC Subtotal	-	6	3	3
Subtotal/Average			13	36	23	24
Total/Average			8,630	9,903	11,011	9,848

Non-Community College Supply—It is important to consider the supply from four-year institutions in the region that provide training programs for these business administration occupations. Exhibit 7 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes: Business/Commerce, General (52.0101), Business Administration and Management, General (52.0201), and Accounting Technology/Technician and Bookkeeping (52.0302). Due to different data collection periods, the most recent three-year period of available data is from 2013 to 2016. Between 2013 and 2016, four-year colleges in the region conferred an average of 10,611 awards annually in related training programs.

Exhibit 7: Regional non-community college awards, 2013-2016

CIP Code	Program	College	2013-14 Awards	2014-15 Awards	2015-16 Awards	3-Year Award Average
52.0101	Business/Commerce, General	Biola University	107	115	125	116
		Loyola Marymount University	19	13	2	11
		LA Subtotal	126	128	127	127
		Argosy University-Orange County	0	15	11	9
		OC Subtotal	0	15	11	9
Subtotal/Average			126	143	138	136
52.0201	Business Administration and Management, General	Abraham Lincoln University	0	0	2	1
		Biola University	1	0	0	0
		California State Polytechnic University-Pomona	1,000	1,010	1,217	1,076
		California State University-Dominguez Hills	486	453	513	484
		California State University-Long Beach	1,048	1,062	1,128	1,079
		California State University-Los Angeles	700	774	1,041	838
		California State University-Northridge	492	547	616	552

CIP Code	Program	College	2013-14 Awards	2014-15 Awards	2015-16 Awards	3-Year Award Average
		Mt Sierra College	5	8	13	9
		Pacific States University	8	3	4	5
		Pepperdine University	208	205	182	198
		University of Southern California	978	985	1,055	1,006
		Whittier College	74	77	79	77
		Woodbury University	38	44	41	41
		LA Subtotal	5,038	5,168	5,891	5,366
		Allied American University	49	70	107	75
		Argosy University-Orange County	14	0	0	5
		Bethesda University	5	4	6	5
		Brandman University	122	133	164	140
		Bristol University	1	68	14	28
		California State University-Fullerton	1,858	1,902	2,120	1,960
		California University of Management and Sciences	1	2	5	3
		Chapman University	261	297	341	300
		Concordia University-Irvine	124	89	87	100
		Hope International University	36	31	46	38
		Southern California	1	0	0	0

CIP Code	Program	College	2013-14 Awards	2014-15 Awards	2015-16 Awards	3-Year Award Average
		Institute of Technology				
		Trident University International	538	403	424	455
		University of California-Irvine	166	126	163	152
		University of Phoenix-California	2,092	1,734	1,384	1,737
		Vanguard University of Southern California	97	90	104	97
		OC Subtotal	5,365	4,949	4,965	5,093
Subtotal/Average			10,403	10,117	10,856	10,459
52.0302	Accounting Technology/Technician and Bookkeeping	InterCoast Colleges-Anaheim	6	12	4	7
		Southern California Institute of Technology	15	13	0	9
		OC Subtotal	21	25	4	17
Subtotal/Average			21	25	4	17
Total/Average			10,550	10,285	10,998	10,611

Appendix A: Occupational demand and wage data by county

Exhibit 8. Los Angeles County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Cost Estimators (13-1051)	5,907	6,161	254	4%	647	\$23.77	\$31.03	\$42.89
Credit Counselors (13-2071)	1,059	1,076	17	2%	93	\$20.77	\$24.68	\$30.30

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	48,811	46,634	(2,177)	(4%)	5,048	\$17.54	\$27.06	\$41.20
Bill and Account Collectors (43-4011)	6,751	6,495	(256)	(4%)	795	\$15.86	\$20.33	\$24.63
Payroll and Timekeeping Clerks (43-4051)	5,879	5,852	(27)	(0%)	651	\$18.78	\$24.18	\$29.34
Tellers (43-3071)	10,159	9,294	(865)	(9%)	1,193	\$13.21	\$14.97	\$17.54
Customer Service Representatives (43-4051)	56,499	57,123	624	1%	7,688	\$14.42	\$17.91	\$23.25
Total	135,065	132,636	(2,429)	(2%)	16,116			

Exhibit 9. Orange County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Cost Estimators (13-1051)	3,364	3,599	235	7%	389	\$25.84	\$33.61	\$46.33
Credit Counselors (13-2071)	468	477	9	2%	43	\$19.46	\$23.12	\$28.40
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	18,483	18,079	(404)	(2%)	1,931	\$19.13	\$29.53	\$44.90
Bill and Account Collectors (43-4011)	3,288	3,219	(69)	(2%)	388	\$16.25	\$20.81	\$25.20
Payroll and Timekeeping Clerks (43-4051)	2,220	2,246	26	1%	252	\$18.37	\$23.65	\$28.69

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Tellers (43-3071)	5,611	5,242	(369)	(7%)	655	\$12.62	\$14.30	\$16.75
Customer Service Representatives (43-4051)	23,691	24,341	650	3%	3,315	\$14.50	\$18.00	\$23.35
Total	57,124	57,203	79	0.1%	6,973			

Exhibit 10. Los Angeles and Orange Counties

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Cost Estimators (13-1051)	9,271	9,760	489	5%	1,036	\$24.45	\$32.00	\$44.13
Credit Counselors (13-2071)	1,526	1,553	27	2%	136	\$20.30	\$24.22	\$29.75
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	67,294	64,713	(2,581)	(4%)	6,979	\$17.96	\$27.72	\$42.22
Bill and Account Collectors (43-4011)	10,039	9,714	(325)	(3%)	1,183	\$15.99	\$20.49	\$24.82
Payroll and Timekeeping Clerks (43-4051)	8,099	8,099	0	0%	903	\$18.66	\$24.03	\$29.16
Tellers (43-3071)	15,769	14,536	(1,233)	(8%)	1,849	\$12.98	\$14.74	\$17.26
Customer Service Representatives (43-4051)	80,190	81,464	1,274	2%	11,004	\$14.44	\$17.94	\$23.28
Total	192,189	189,839	(2,350)	(1%)	23,089			

Appendix B: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- Employment Development Department, Unemployment Insurance Dataset
- Living Insight Center for Community Economic Development
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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