

# BUSINESS & ENTREPRENEURSHIP



**Orange County Sector Analysis Project**

Nov 2019

Prepared by:  
Orange County Center of Excellence  
for Labor Market Research

POWERED BY



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Orange County Community Colleges

# BUSINESS AND ENTREPRENEURSHIP

## Demand and Supply Analysis: Orange County

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#### Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host college/district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

## INTRODUCTION

This sector brief is a product of the Orange County Sector Analysis Project. It provides information about the Business and Entrepreneurship sector in Orange County, one of Orange County's six priority sectors; it compares labor market demand with educational program supply for middle-skill jobs and provides qualitative information from experts in the field. Orange County community colleges could use the information in this report for strategic planning and discussions about program development, career pathways work, sector strategies, noncredit-to-credit pipelines, apprenticeship programs, and work-based learning opportunities.

All of the Orange County Sector Analysis Project briefs began with quantitative labor market demand and supply analysis; however, they also include qualitative information derived from the project's focus group discussions. Between July and August 2019, the Orange County Center of Excellence for Labor Market Research (COE) hosted a total of 12 sector-specific focus groups with regional stakeholders, including faculty and deans, as well as regional and state directors for employer engagement. Two of these focus groups were specific to the Business and Entrepreneurship sector. The objectives of the focus groups were to identify labor market supply gaps (supply gaps) in middle-skill jobs; understand where programs exist or do not exist to fill in the supply gaps; and discuss how Orange County's community colleges could close the supply gaps. Focus group participants reviewed the demand and supply analysis prior to meeting and provided intelligence regarding how they are working to close supply gaps as well as the challenges they encounter in their programs; this valuable information could not be captured via traditional labor market research methods. The COE recorded then analyzed these discussions which resulted in the "Focus Group Insights" sections throughout this brief, supplementing traditional, quantitative labor market data with important, qualitative information.

## Middle-Skill Jobs and Living Wage Introduction

In this brief, middle-skill jobs include: 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.

In this brief, top middle-skill jobs are defined as jobs that have both the most labor market demand (annual job openings) and entry-level wages at or above the California Family Needs Calculator<sup>1</sup> (commonly known as a "living wage"). The living wage is the hourly wage that a single adult needs to earn in order to meet basic needs in Orange County, and is currently \$17.39 per hour. The living wage is defined by the California Family Needs Calculator, which calculates the income necessary to cover costs including housing, food, transportation, health care, and other basic necessities.

Entry-level wage is defined as the 25<sup>th</sup> percentile hourly wage, which means that 25% of all workers in that occupation earn equal to or below this amount. Percentile wages represent the distribution of wages for each occupation. Generally, workers with minimal education and experience can expect to earn wages near the 10<sup>th</sup> percentile. With the additional education and training students receive in community college programs, they are more likely to earn wages at the 25<sup>th</sup> percentile, rather than the 10<sup>th</sup> percentile. Generally, with even more education and experience, students could expect to progress and earn the median wage, which is defined as the 50<sup>th</sup> percentile hourly wage.

## Demand Introduction

For the purpose of this report, labor market demand is determined by the number of annual job openings employers expect to fill due to job growth and employee turnover between 2018 and 2023. Job growth is when an employer experiences increased demand for products and hires new employees to increase production, while employee turnover is when an employer hires replacement workers for employees who leave the workforce or change occupations.

## Supply Introduction

Supply is determined by the average annual-number of related awards (e.g., certificates, degrees) generated between 2015 and 2017 by the region's community colleges and other educational institutions (e.g., private providers) for the purpose of this

<sup>1</sup> <https://insightccd.org/2018-family-needs-calculator/>

report. However, it should be noted that a student may earn more than one award; therefore, supply may be overestimated for certain occupations.

Whether or not there is a supply gap is determined by the difference between the demand and supply. The methodology regarding how these numbers are calculated is described in Appendix A.

#### **FOCUS GROUP INSIGHTS**

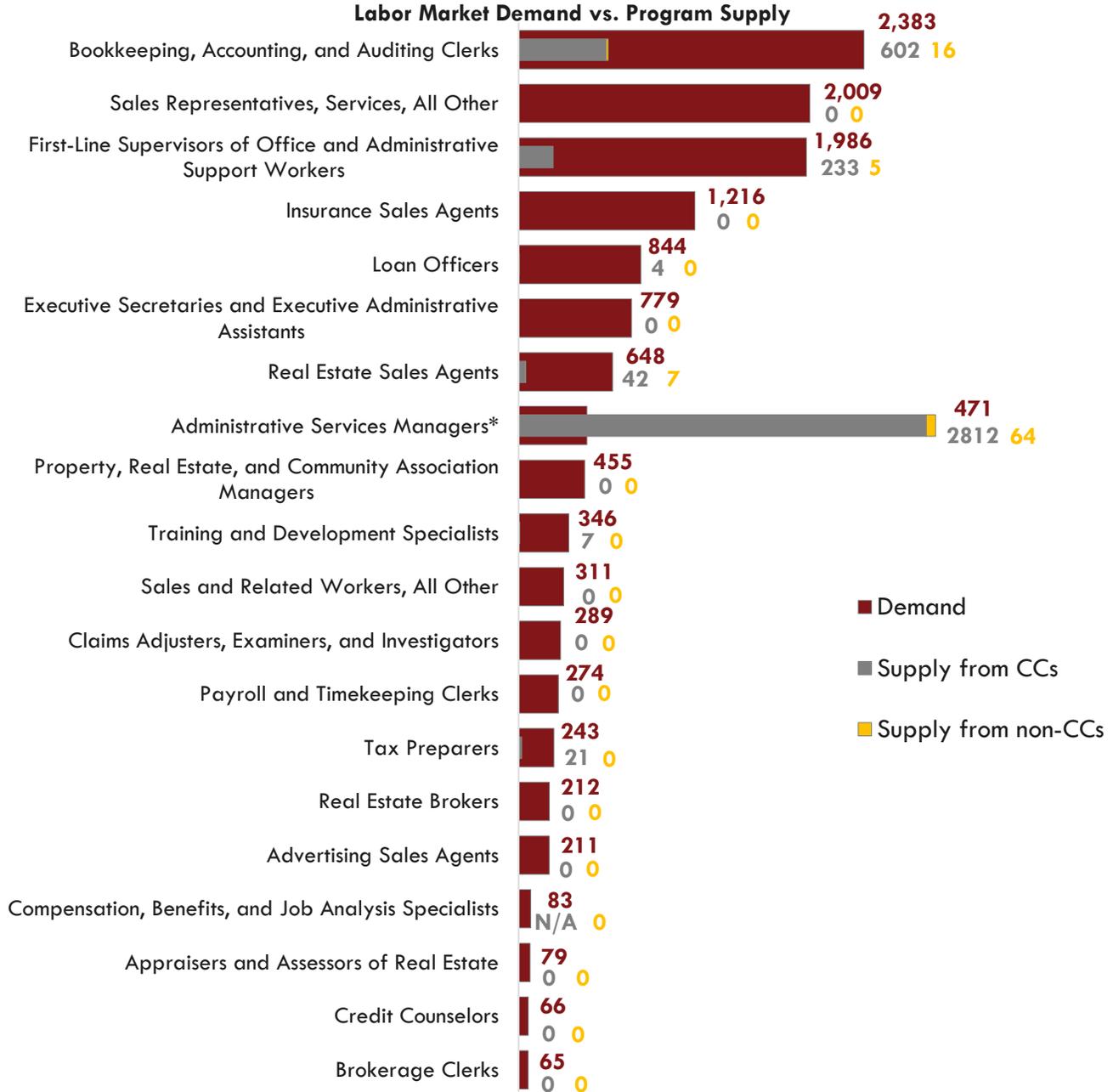
The Business and Entrepreneurship sector was split into two focus groups that were held on different days and included a total of eight faculty members – two counselors and six academic – and four administrators from seven institutions – six of the nine community colleges, and one noncredit school – that offered Business and Entrepreneurship programs in Orange County between 2015 and 2017. The regional director for employer engagement also attended one of the focus groups.

Focus group participants identified several data limitations, challenges in expanding programs, and other issues that were common across multiple sectors. The cross-sector, common themes are expanded on and explained in further detail in the standalone Orange County Sector Analysis Project Executive Summary report. Focus group participants also reported on limitations and challenges that were unique to the Business and Entrepreneurship sector. This sector-specific information is highlighted throughout this report in the Focus Group Insights and the Focus Group Insights – The Big Picture sections.

**BUSINESS AND ENTREPRENEURSHIP TOP MIDDLE-SKILL JOBS**

This section compares Orange County’s labor market demand for the top middle-skill jobs in Business and Entrepreneurship with program supply from the region’s community colleges and non-community college providers (Exhibit 1). As seen in Exhibit 2, the entry-level wages<sup>2</sup> for these top middle-skill jobs are higher than the \$17.39 per hour living wage. Descriptions for each occupational title can be found in Appendix B. Detailed supply and demand data analyzed for each occupation, including supply numbers by institutions is included in Appendix C.

**Exhibit 1. Business and Entrepreneurship Top Middle-Skill Jobs in Orange County:**



(Please note: \* indicates that the occupation has an oversupply of labor, and N/A indicates that no community college program reported awards for this occupation or no community college program is available for this occupation.)

<sup>2</sup> In this report, entry-level wage is defined as the 25<sup>th</sup> percentile hourly wage, which means that 25% of all workers in the field earn equal to or below this amount. Generally, workers with less experience earn lower wages.

## FOCUS GROUP INSIGHTS

### Low Completion Numbers

According to the demand and supply in Exhibits 1 and 3, the community colleges in Orange County are undersupplying for both types of jobs analyzed in this brief: 1) top middle-skill jobs and 2) jobs that have entry-level wages below the California Family Needs Calculator – or living wage, but have median wages above the living wage. According to the California Community Colleges Chancellor's Office (CCCCO) dashboard tool, LaunchBoard<sup>1</sup>, 31,648 (unduplicated) students took one or more courses in Business and Entrepreneurship programs in Program Year 2016-17. However, in that same year, only 3,441 students earned a certificate or degree.

Focus group participants provided some explanations as to why supply numbers were so low:

- Because Business and Entrepreneurship programs tend to attract working industry professionals, students may drop out or withdraw from the program before completing because they learned what they came to the program to learn. This has shown to be particularly true for students in sales, tax, and accounting courses.
- In order to close the many supply gaps in the sector, companies sometimes hire students who have the foundational skills needed for a particular job before they have completed their career education program. In some cases, students will participate in an internship program or work-based learning opportunity and receive a full-time job offer prior to completing their degree or certificate.
- Enrollment management decisions can sometimes mean a class is cut due to low enrollment, leaving students without options to complete their degree or certificate at their current community college.

Faculty and administrators said that though completion numbers appeared low, they know that many non-completers have positive employment outcomes. Some faculty members said that they are developing internal tracking systems to identify these students. Additionally, the CTE Outcomes Survey (CTEOS) could help colleges track and better understand outcomes for students who leave a program before completing a degree or certificate.

### Experience Requirements

Focus group participants noted that some of these occupations, such as Administrative Services Managers and Executive Secretaries and Executive Administrative Assistants, meet the middle-skill definition used in this report, but are not entry-level occupations. Obtaining employment in these occupations is not realistic for students that are looking for a job with little experience “right out of college”.

### Challenges in Identifying Supply for Management Positions

This brief analyzes labor market demand and supply data for the Business and Entrepreneurship sector, using occupational codes from the Standard Occupational Classification (SOC) system for demand data and program codes from the Taxonomy of Programs (TOP) as well as Classification of Instructional Programs (CIP) systems for supply data (see Appendix A for more information). However, matching SOC codes to TOP and CIP codes has its limitations, particularly for management positions. Focus group participants noted that the TOP codes associated with the Administrative Services Managers occupation train for various managerial occupations, not just Administrative Service Managers. For this reason, the program supply numbers for Administrative Services Managers is likely overstated.

### Entrepreneurship Skills

Focus group participants shared that finding information and data on entrepreneurship skills is a challenge when reviewing or creating programs. There is no TOP code for entrepreneurship and a comprehensive list of entrepreneurship programs does not currently exist. However, the skills taught in entrepreneurship classes can be applied across a variety of occupations. To address the need for these skills in other areas, Irvine Valley College has promoted entrepreneurship classes to disciplines other than Business across the college and hosts pitch competitions with students from all disciplines. Focus groups participants also explained that, while there is value in teaching these skills, entrepreneurship courses are non-transferable, so they are susceptible to being cut due to low enrollment.

*“The lack of a TOP code [for entrepreneurship] is a problem. Where do you put it? Colleges may be coding similar programs differently, but we wouldn't know.”*  
– Saddleback College Faculty Member

#### Licenses and Certifications

Focus group participants identified a number of occupations, including Real Estate Sales Agents and Hairdressers, Hairstylists, and Cosmetologists, that require a state license or certification. Other occupations, such as Bookkeeping, Accounting, and Auditing Clerks, do not require a state license or certification, but a Certified Public Accountant (CPA) certification makes students more attractive to employers and can lead to advancement opportunities. Focus group participants stated that many students enrolled in accounting courses previously graduated from a four-year institution and take additional courses at community colleges to sit for the CPA exam. According to the CCCCO LaunchBoard<sup>3</sup>, in the 2016-17 academic year, three colleges had a significant percentage of students enrolled in accounting courses who previously graduated from a four-year institution: Coastline (22%), Saddleback (21%), and Irvine Valley (18%).

Other third-party certifications that Orange County community colleges train for are American Bar Association (ABA) Paralegal, Entrepreneurship and Small Business (ESB), Microsoft Office Specialist, and Project Management Professional (PMP).

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<sup>3</sup> [calpassplus.org/Launchboard/Community-College-Pipeline.aspx](http://calpassplus.org/Launchboard/Community-College-Pipeline.aspx)

**Exhibit 2. Business and Entrepreneurship Top Middle-Skill Jobs in Orange County: Entry-Level and Median Wages**

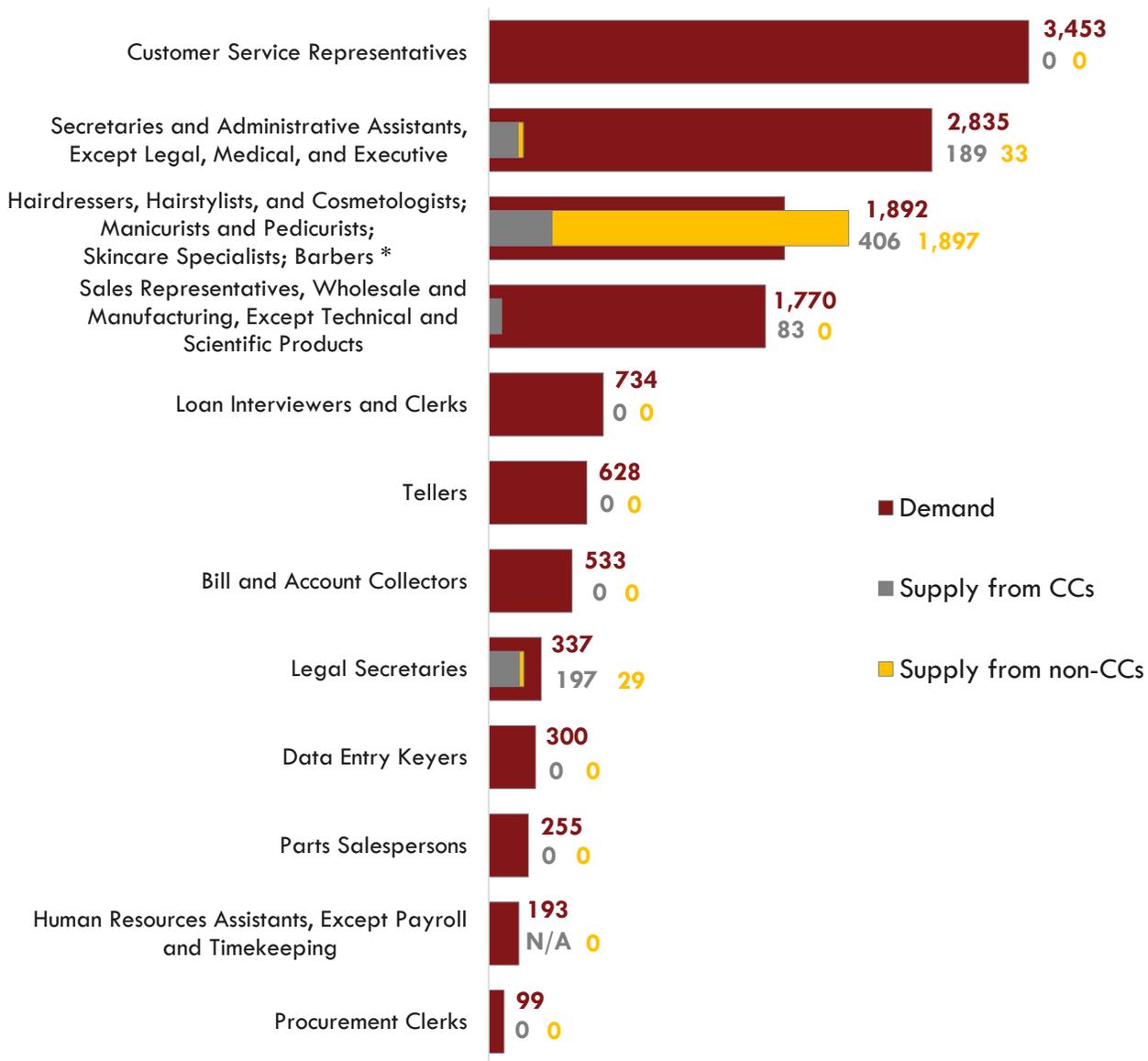
SOC Code	SOC (Occupational) Title	Demand (Annual Openings)	Entry-Level Wage (25 <sup>th</sup> Percentile)	Median Wage
43-3031	Bookkeeping, Accounting, and Auditing Clerks	2,383	\$17.61	\$22.05
41-3099	Sales Representatives, Services, All Other	2,009	\$18.32	\$26.33
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,986	\$22.80	\$28.72
41-3021	Insurance Sales Agents	1,216	\$17.50	\$23.63
13-2072	Loan Officers	844	\$18.53	\$30.89
43-6011	Executive Secretaries and Executive Administrative Assistants	779	\$25.93	\$31.80
41-9022	Real Estate Sales Agents	648	\$19.12	\$20.16
11-3011	Administrative Services Managers	471	\$41.40	\$55.21
11-9141	Property, Real Estate, and Community Association Managers	455	\$20.64	\$26.36
13-1151	Training and Development Specialists	346	\$24.29	\$32.97
41-9099	Sales and Related Workers, All Other	311	\$19.99	\$24.56
13-1031	Claims Adjusters, Examiners, and Investigators	289	\$23.82	\$32.31
43-3051	Payroll and Timekeeping Clerks	274	\$20.36	\$25.40
13-2082	Tax Preparers	243	\$17.99	\$25.14
41-9021	Real Estate Brokers	212	\$22.04	\$24.89
41-3011	Advertising Sales Agents	211	\$23.27	\$27.89
13-1141	Compensation, Benefits, and Job Analysis Specialists	83	\$25.32	\$33.35
13-2021	Appraisers and Assessors of Real Estate	79	\$22.50	\$27.47
13-2071	Credit Counselors	66	\$20.85	\$24.10
43-4011	Brokerage Clerks	65	\$22.19	\$26.39

**BUSINESS AND ENTREPRENEURSHIP MIDDLE-SKILL JOBS WITH ENTRY-LEVEL WAGES BELOW CALIFORNIA FAMILY NEEDS CALCULATOR**

While it is important to understand which top middle-skill jobs have opportunities for increased program supply, it is also important to consider middle-skill occupations that have entry-level wages below the regional living wage but median wages near or above it. Since wages generally increase from entry-level to median earnings with additional experience and training, students could potentially earn self-sustaining wages with additional apprenticeship or work-based learning opportunities.

As seen in Exhibit 3, middle-skill Business and Entrepreneurship jobs with entry-level wages below the regional living wage have a significant number of annual job openings (labor market demand).

**Exhibit 3. Business and Entrepreneurship Middle-Skill Jobs with Entry-Level Wages Below the California Family Needs Calculator in Orange County: Labor Market Demand vs. Program Supply**



(Please

note: \* indicates that the occupation has an oversupply of labor, and N/A indicates that no community college program reported awards for this occupation or no community college program is available for this occupation.)

## BUSINESS AND ENTREPRENEURSHIP

### Demand and Supply Analysis: Orange County

While these occupations have entry-level wages below the California Family Needs Calculator of \$17.39 per hour, occupations such as Customer Service Representatives; Secretaries and Administrative Assistants, Except Legal, Medical, and Executive; Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products; Loan Interviewers and Clerks; Bill and Account Collectors; Legal Secretaries; Parts Salespersons; Human Resources Assistants, Except Payroll and Timekeeping; and Procurement Clerks have median wages higher than the regional living wage, as denoted via the gray shading in Exhibit 4.

**Exhibit 4. Business and Entrepreneurship Middle-Skill Jobs with Entry-Level Earnings Below the California Family Needs Calculator in Orange County: Entry-Level and Median Wages**

SOC Code	SOC (Occupational) Title	Demand (Annual Openings)	Entry-Level Wage (25 <sup>th</sup> Percentile)	Median Wage
43-4051	Customer Service Representatives	3,453	\$14.58	\$17.83
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	2,835	\$15.69	\$19.66
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,770	\$17.38	\$25.34
39-5012	Hairdressers, Hairstylists, and Cosmetologists <sup>^</sup>	1,079	\$11.55	\$12.00
43-4131	Loan Interviewers and Clerks	734	\$14.54	\$20.22
43-3071	Tellers	628	\$12.61	\$14.09
39-5092	Manicurists and Pedicurists <sup>^</sup>	577	\$10.24	\$10.88
43-3011	Bill and Account Collectors	533	\$16.22	\$20.42
43-6012	Legal Secretaries	337	\$16.41	\$24.33
43-9021	Data Entry Keyers	300	\$13.14	\$16.55
41-2022	Parts Salespersons	255	\$11.83	\$18.11
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	193	\$14.75	\$17.76
39-5094	Skincare Specialists <sup>^</sup>	154	\$12.22	\$14.11
43-3061	Procurement Clerks	99	\$16.67	\$19.42
39-5011	Barbers <sup>^</sup>	82	\$11.30	\$11.82

(Please note: <sup>^</sup>Indicates that demand and supply for these occupations were combined in Exhibit 3.

## FOCUS GROUP INSIGHTS – THE BIG PICTURE

Focus group participants addressed other issues and challenges that cannot be captured by traditional labor market information and provided insight on the tactics colleges and employers are currently using to address supply gaps in the Business and Entrepreneurship sector.

### Employer Engagement

Faculty from multiple colleges noted that they are working to connect students with employers that have a need for qualified workers. However, developing and maintaining continuous relationships with industry partners is time consuming and difficult. In many cases, individual faculty, administrators, or staff are working with different employers and are unaware of each other's efforts. An Irvine Valley College faculty member said that they would like to bring in guest speakers or take students on field trips, but red tape and administrative regulations make this process long and cumbersome. Focus group participants felt that since employers are not used to the bureaucracy of the community college system, the paperwork and long waiting periods could be off-putting and damage relationships.

Focus group participants also noted that, though many employers prefer to hire students with four-year degrees, several employers are open to partnering with community colleges for internships. To respond to employer interest, Coastline and Golden West colleges are exploring partnerships with local companies for internships. Fullerton College currently has an internship program and is working to expand it due to positive feedback from employers and students. In some cases, employers have offered students full-time jobs after they complete their internship.

### Creative Ways Community Colleges are Offering Programs

Focus group participants discussed several creative ways they are offering programs and some of the challenges they face when developing new means to offer programs:

- Several colleges, including Fullerton, Irvine Valley, and Santiago Canyon, offer dual-enrollment courses at high schools within their service area. Dual-enrollment makes high school students aware of business programs at the community colleges and creates a potential pipeline of students to increase enrollment.
- Irvine Valley College has promoted entrepreneurship classes to disciplines other than Business across the college and hosts pitch competitions with students from all disciplines. They also hold entrepreneurship events with business partners and run a summer entrepreneurship workshop.
- North Orange Continuing Education has been testing out Pearson's MyLab IT (also known as MyIT Lab) which is a teaching and learning platform with simulated scenarios for students in their Business Information Worker (BIW) and Administrative Professional programs.

### New Programs

Faculty and administrators identified over a dozen new programs that they are either in the process of creating or plan to create in the near future. Several of these new programs will address new and emerging areas such as data/business analytics and entrepreneurship fields. Other programs will focus on accounting, bookkeeping, and human resources.

### Challenges in Expanding Programs

Focus group participants identified several challenges to expanding programs in the Business and Entrepreneurship sector. Many of these challenges, including the lack of dedicated lab space, difficulty hiring faculty and staff, and high costs for equipment, cut across all sectors. However, focus groups participants identified a unique and significant challenge for the Business and Entrepreneurship sector. They stated that programs in this sector are often the "default" program for students who are unsure of their future plans. Lack of a clear path can discourage students from completing the program and in some cases, continuing their education. Focus group participants shared that this pattern of students dropping out negatively affects course enrollments and may lead to courses being cut. Furthermore, they explained that once enrollments begin declining, it is difficult to justify expanding a program.

## KEY FINDINGS: BUSINESS AND ENTREPRENEURSHIP

Based on the demand and supply data, as well as the focus group insights analyzed in this brief, the COE identified the following key research findings and recommendations:

### Demand and Supply Key Findings

**25,999**

annual job openings  
(labor market demand)

**6,655**

average annual program awards  
(labor market supply)

**19,344**

supply gap (number of  
awards needed to close the gap)

### Focus Group Key Findings and Recommendations

Key Finding	Recommendation
<p><b>1. This sector has both the highest labor market demand and the highest number of program supply of all the sectors – but also the biggest gap of more than 19,300 awards:</b> Community colleges in Orange County are undersupplying for middle-skill Business and Entrepreneurship jobs. Nearly 11% of all students enrolled in Business and Entrepreneurship programs complete a degree or certificate. This sector tends to be the “default” major for students who are unsure of their career plans and the programs tend to attract working industry professionals who may drop out or withdraw before completing because they have learned the skills they need in their current job.</p>	<p><b>1.</b> To increase completion rates of students in Business and Entrepreneurship programs, colleges could focus regional and local efforts to help undecided students hone in on their interests so that they have a clear path to progression and completion. College faculty, deans and the Regional Director for Employer Engagement for this sector should review program and course data to determine the specific barriers that prevent students from successfully completing a program (e.g., challenging introductory courses and differing pre-requisites across colleges for higher level courses). Strong Workforce Program (SWP) funds could be invested at the college level to address students’ specific barriers to course/program retention and completion.</p>
<p><b>2. Employers hire students before they complete training:</b> In order to close the many supply gaps in the sector, companies sometimes hire students who have the foundational skills needed for a particular job before they have completed their career education program. In some cases, students will participate in an internship program or work-based learning opportunity and receive a full-time job offer prior to completing their degree or certificate.</p>	<p><b>2.</b> To increase completion numbers in Business and Entrepreneurship programs, faculty, deans, and the Regional Director for Employer Engagement should review program curriculum and identify programs that may be oversized. These are programs that offer more courses than what may be needed in the labor market, creating long-term programs that could actually be shortened by offering fewer courses/credits, yet still prepare students for small companies’ needs.</p>

**Key Finding**

- 3. Dual-Enrollment could encourage more students to enroll in Business and Entrepreneurship programs:** Even though this sector has the highest number of students in the region, labor market demand is so high that there is the need for a consistent pipeline of students entering the sector's programs. There is room to increase the 21% of the students in this sector who are 19 years old or younger.
- 4. There is no Taxonomy of Program (TOP) code for Entrepreneurship:** There is no TOP code for entrepreneurship and a comprehensive list of entrepreneurship programs does not currently exist, which makes finding supply information and data on entrepreneurship skills a challenge when reviewing or creating programs. However, the skills taught in entrepreneurship classes can be applied across a variety of occupations and sectors.
- 5. Knowledge, Skills, and Abilities (KSAs) for the sector have not been validated by employers:** The OC Sector Analysis Project brief examines job gaps, but does not explore the specific KSAs taught at the colleges and compare them to the labor market's demand for Business and Entrepreneurship KSAs.

**Recommendation**

- 3.** To increase enrollments and help students focus on careers in this sector, colleges should offer dual-enrollment courses at high schools within their service area. Dual-enrollment makes high school students aware of business programs at the community colleges and creates a potential pipeline of students to increase enrollment.
- 4.** To better understand industry-desired entrepreneurship skills and quantify existing entrepreneurship programs, the COE should work with college administrators, faculty, and the Regional Director for Employer Engagement to identify existing entrepreneurship courses, programs, and degrees in order to generate a list of associated regional TOP codes that could be used for regional alignment.
- 5.** To determine if the region's community colleges are training for the right KSAs, the Business and Entrepreneurship Regional Director for Employer Engagement should convene employers in a "regional advisory group" where employers can review program KSAs, provide feedback, and validate the KSAs' current relevance and demand in the labor market.

**APPENDIX A: BUSINESS AND ENTREPRENEURSHIP DATA DEFINITIONS**

The Centers of Excellence for Labor Market Research (COE) prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Emsi, a software program that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS), and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

The California Community Colleges (CCC) define “sectors” by TOP codes. To determine what occupations should be analyzed in this brief, the COE first reviewed the TOP codes associated with the sector and then matched them with the SOC codes. According to the CCC, the following six-digit TOP codes define the Business and Entrepreneurship sector:

<b>TOP6 Program Name</b>	<b>TOP6 Code</b>
Business and Commerce, General	0501.00
Accounting	0502.00
Tax Studies	0502.10
Banking and Finance	0504.00
Business Administration	0505.00
Business Management	0506.00
Management Development and Supervision	0506.30
Small Business and Entrepreneurship	0506.40
Marketing and Distribution	0509.00
Advertising	0509.10
Purchasing	0509.20
Sales and Salesmanship	0509.40
e-commerce (business emphasis)	0509.70
Real Estate	0511.00
Escrow	0511.10
Insurance	0512.00
Legal Office Technology	0514.10
Customer Service	0518.00
Other Business and Management	0599.00
Mortuary Science	1255.00
Massage Therapy	1262.00
Custodial Services	3005.00
Cosmetology and Barbering	3007.00

Using a TOP-SOC crosswalk, the COE then identified middle-skill jobs for which programs within these TOP codes train. The COE examined more than 850 occupational codes from the Standard Occupational Classification (SOC)<sup>4</sup> system and identified approximately 300 occupational codes as middle-skill jobs

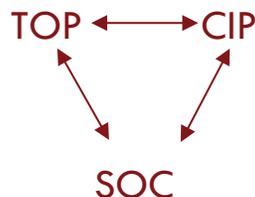
Middle-skill jobs include:

- 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.

For this study, the COE analyzed occupations with a labor market demand of at least 50 annual job openings. (For comparison, the average and median demand for an occupation in Orange County is 307 and 63 annual job openings, respectively.)<sup>5</sup> The number of annual job openings estimates employment change and turnover for an occupation each year between 2018 and 2023. Annual job openings include:

- Job Growth: An employer experiences increased demand for products and hires new employees to increase production. If job growth is zero or negative, then any and all openings are due to replacement needs.
- Replacement Needs: An employer hires replacement workers for employees who leave the workforce or change occupations. Replacement rates are derived from national 10-year, occupation-specific percentages published by the U.S. BLS's Employment Projections program.

The COE then cross-referenced the SOC codes with CIP and TOP codes to compare labor market demand with program supply. The following diagram illustrates this process:



The COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a “supply table” with this information, which is the source of the program supply data for this report. TOP data comes from the California Community Colleges Chancellor’s Office MIS Data Mart ([datamart.cccco.edu](http://datamart.cccco.edu)) and CIP data comes from the Integrated Postsecondary Education Data System ([nces.ed.gov/ipeds/use-the-data](http://nces.ed.gov/ipeds/use-the-data)), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California community college system do not use TOP codes in their reporting systems.

Because a TOP/CIP code may train for more than one occupation, simply aggregating all supply from all related codes may overestimate supply for an occupation. Therefore, the COE de-duplicated TOP codes that trained for more than one occupation to avoid counting the program supply more than once. Doing so provides a more accurate representation of the supply gaps in the region by occupation. This information can be seen in the demand and supply tables in Appendix C of this study.

<sup>4</sup> SOC is a federal statistical standard used by EDD, BLS and other federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data.

<sup>5</sup> Emsi. Data set 2019.2. QCEW Employees + Non-QCEW + Self-Employed. 2018-2023.

## Qualitative Methodology

An integral aspect of the Orange County Sector Analysis Project was the qualitative data collected during the project's focus groups. In May 2019, the COE created an advisory group comprised of the Orange County Regional Consortium Director as well as five CTE deans and directors that represented the four community college districts in Orange County. The advisory group created a process and timeline for inviting faculty and administrators to participate in focus groups to better understand where programs exist or do not exist to fill supply gaps and discuss how Orange County's community colleges could close the supply gaps for the county's eight priority and emerging sectors.

To create the invite list of faculty and administrators, Regional Directors for Employer Engagement and career education deans at each college were asked to identify faculty and administrators that could represent their respective colleges in the sector-specific focus groups. Once this list was compiled, the career education deans invited faculty and administrators to express their interest in participating in a focus group via email. The email introduced the COE, provided an overview of the Orange County Sector Analysis Project, described the goals of the focus groups, and informed faculty that they would be compensated for their participation, and that lunch would be provided for all participants. All those that stated their interest were then connected with the COE who managed the focus groups scheduling and details.

In order to be as inclusive as possible, 12 focus groups were scheduled for the eight sectors – four sectors had one focus group each and four sectors had two focus groups each, during a three-week period from July to August 2019. All focus groups participants received a confirmation email before the event that included the focus group agenda, their sector-specific draft brief, and a pre-assignment with questions based off of the information contained in the draft sector briefs. Focus group participants were instructed to complete and bring the pre-assignment to the convening so that they were prepared to discuss the data, the challenges they face in their programs, and strategies to close supply gaps. Each focus groups was recorded, with permission of the participants, by the COE solely for transcription purposes.

The COE conducted no more than two focus group sessions per day. During the focus groups the Orange County Sector Analysis Project was explained and then the information contained in the draft sector briefs was presented in detail. Participants were encouraged to ask questions and engage in dialogue throughout the entire focus group session. The COE took notes of each discussion as well as recorded the sessions, with permission of the participants and solely for transcription purposes.

Following the conclusion of the focus groups, the COE compiled the audio files, transcripts, notes, and pre-assignments to conduct a qualitative analysis of the themes for each focus group and to identify commonalities across multiple focus groups. The findings from this analysis have been highlighted throughout this report in the "Focus Group Insight" sections.

**APPENDIX B: DEFINITIONS FOR BUSINESS AND ENTREPRENEURSHIP  
MIDDLE SKILL JOBS**

The following definitions and sample job titles for each occupation are derived from O\*NET, the nation's primary source of occupational information. The O\*NET database contains hundreds of standardized and occupation-specific descriptors on nearly 1,000 occupations. O\*NET is developed and sponsored by the U.S. Department of Labor<sup>6</sup>

**Administrative Services Managers (SOC 11-3011):** Plan, direct, or coordinate one or more administrative services of an organization, such as records and information management, mail distribution, facilities planning and maintenance, custodial operations, and other office support services. Sample job titles include:

- Facilities Director
- Business Administrator
- Administrative Services Manager
- Office Manager
- Administrative Officer

**Advertising Sales Agents (SOC 41-3011):** Sell or solicit advertising space, time, or media in publications, signage, TV, radio, or Internet establishments or public spaces. Sample job titles include:

- Advertising Representative
- Display Advertising Sales Representative
- Advertising Consultant
- Sales Representative

**Appraisers and Assessors of Real Estate (SOC 13-2021):** Appraise real property and estimate its fair value. May assess taxes in accordance with prescribed schedules. Sample job titles include:

- Tax Assessor
- County Assessor
- City Assessor
- Staff Appraiser
- Residential Real Estate Appraiser
- Residential Fee Appraiser

**Barbers (SOC 39-5011):** Provide barbering services, such as cutting, trimming, shampooing, and styling hair, trimming beards, or giving shaves. Sample job titles include:

- Barber
- Stylist
- Barber Shop Operator
- Hairdresser

**Bill and Account Collectors (SOC 43-3011):** Locate and notify customers of delinquent accounts by mail, telephone, or personal visit to solicit payment. Duties include receiving payment and posting amount to customer's account; preparing statements to credit department if customer fails to respond; initiating repossession proceedings or service disconnection; and keeping records of collection and status of accounts. Sample job titles include:

- Debt Collector
- Collection Agent
- Collection Specialist
- Telephone Collector
- Patient Access Specialist
- Credit Clerk

**Bookkeeping, Accounting, and Auditing Clerks (SOC 43-3031):** Compute, classify, and record numerical data to keep financial records complete. Perform any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records. May also check the accuracy of figures, calculations, and postings pertaining to business transactions recorded by other workers. Sample job titles include:

- Accounts Receivable Clerk
- Accounts Payable Clerk
- Accounting Clerk
- Accounting Assistant
- Fiscal Technician

<sup>6</sup> <https://www.onetonline.org/>

**Brokerage Clerks (SOC 43-4011):** Perform duties related to the purchase, sale or holding of securities. Duties include writing orders for stock purchases or sales, computing transfer taxes, verifying stock transactions, accepting and delivering securities, tracking stock price fluctuations, computing equity, distributing dividends, and keeping records of daily transactions and holdings. Sample job titles include:

- Trading Assistant
- Client Administrator
- Sales Trader
- Sales Assistant
- Operations Clerk
- Client Service Associate

**Claims Adjusters, Examiners, and Investigators (SOC 13-1031):** Review settled claims to determine that payments and settlements are made in accordance with company practices and procedures. Confer with legal counsel on claims requiring litigation. May also settle insurance claims. Sample job titles include:

- Worker's Compensation Claims Examiner
- Reinsurance Claim Analyst
- Property Damage Claims Adjustor
- Claim Representative
- Investigator

**Compensation, Benefits, and Job Analysis Specialists (SOC 13-1141):** Conduct programs of compensation and benefits and job analysis for employer. May specialize in specific areas, such as position classification and pension programs. Sample job titles include:

- Position Classification Specialist
- Compensation Consultant
- Benefits Administrator
- Personnel Specialist
- Compensation/Benefits Specialist

**Credit Counselors (SOC 13-2071):** Advise and educate individuals or organizations on acquiring and managing debt. May provide guidance in determining the best type of loan and explaining loan requirements or restrictions. May help develop debt management plans, advise on credit issues, or provide budget, mortgage, and bankruptcy counseling. Sample job titles include:

- Financial Wellness Coach
- Financial Health Counselor
- Financial Aid Counselor
- Loan Counselor
- Financial Assistance Advisor
- Peer Financial Counselor

**Customer Service Representatives (SOC 43-4051):** Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints. Excludes individuals whose duties are primarily installation, sales, or repair. Sample job titles include:

- Customer Service Agent
- Social Worker
- Sales Facilitator
- Member Services Representative
- Member Services Representative
- Patient Representative

**Data Entry Keyers (SOC 43-9021):** Operate data entry device, such as keyboard or photo composing perforator. Duties may include verifying data and preparing materials for printing. Sample job titles include:

- Data Entry Clerk
- Data Entry Operator
- Records Clerk
- Fiscal Assistant
- Data Transcriber
- Data Entry Machine Operator

**Executive Secretaries and Executive Administrative Assistants (SOC 43-6011):** Provide high-level administrative support by conducting research, preparing statistical reports, handling information requests, and performing clerical functions such as preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings. May also train and supervise lower-level clerical staff. Sample job titles include:

- Administrative Aide
- Executive Assistant
- Administrative Secretary
- Staff Assistant
- Personal Secretary
- Office Administrator

**First-Line Supervisors of Office and Administrative Support Workers (SOC 43-1011):** Directly supervise and coordinate the activities of clerical and administrative support workers. Sample job titles include:

- Payroll Supervisor
- Office Supervisor
- Billing Department Supervisor
- Customer Service Manager
- Clerical Supervisor
- Team Manager

**Hairdressers, Hairstylists, and Cosmetologists (SOC 39-5012):** Provide beauty services, such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May apply makeup, dress wigs, perform hair removal, and provide nail and skin care services. Sample job titles include:

- Hair Stylist
- Hairdresser
- Cosmetologist
- Beautician
- Cosmetologist

**Human Resources Assistants, Except Payroll and Timekeeping (SOC 43-4161):** Compile and keep personnel records. Record data for each employee, such as address, weekly earnings, absences, amount of sales or production, supervisory reports, and date of and reason for termination. May prepare reports for employment records, file employment records, or search employee files and furnish information to authorized persons. Sample job titles include:

- Personnel Assistant
- Personnel Associate
- Employment Assistant
- Human Resources Clerk
- Human Resources Technician
- Human Resources Generalist

**Insurance Sales Agents (SOC 41-3021):** Sell life, property, casualty, health, automotive, or other types of insurance. May refer clients to independent brokers, work as an independent broker, or be employed by an insurance company. Sample job titles include:

- Insurance Agent
- Sales Representative
- Surety Bond Agent
- Agent

**Legal Secretaries (SOC 43-6012):** Perform secretarial duties using legal terminology, procedures, and documents. Prepare legal papers and correspondence, such as summonses, complaints, motions, and subpoenas. May also assist with legal research. Sample job titles include:

- Secretary
- Magistrate Assistant
- Legal Secretary
- Paralegal
- Litigation Assistant
- Judicial Administrative Assistant

**Loan Interviewers and Clerks (SOC 43-4131):** Interview loan applicants to elicit information; investigate applicants' backgrounds and verify references; prepare loan request papers; and forward findings, reports, and documents to appraisal department. Review loan papers to ensure completeness, and complete transactions between loan establishment, borrowers, and sellers upon approval of loan. Sample job titles include:

- Mortgage Loan Processor
- Underwriter
- Loan Clerk
- Loan Processor
- Mortgage Broker
- Loan Analyst

**Loan Officers (SOC 13-2072):** Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans. Advise borrowers on financial status and payment methods. Includes mortgage loan officers and agents, collection analysts, loan servicing officers, and loan underwriters. Sample job titles include:

- Mortgage Loan Officer
- Consumer Loan Officer
- Small Business Banking Officer
- Mortgage Broker
- Branch Lending Officer
- Personal Banking Officer

**Manicurists and Pedicurists (SOC 39-5092):** Clean and shape customers' fingernails and toenails. May polish or decorate nails.

Sample job titles include:

- Pedicurist
- Nail Technician
- Manicurist
- Fingernail Technician
- Nail Artist

**Parts Salespersons (SOC 41-2022):** Sell spare and replacement parts and equipment in repair shop or parts store. Sample job titles include:

- Parts Clerk
- Salesperson
- Parts Professional
- Wholesale Parts Salesperson
- Parts Counterperson

**Payroll and Timekeeping Clerks (SOC 43-3051):** Compile and record employee time and payroll data. May compute employees' time worked, production, and commission. May compute and post wages and deductions or prepare paychecks.

Sample job titles include:

- Timekeeper
- Payroll Technician
- Personnel Assistant
- Payroll Specialist

**Procurement Clerks (SOC 43-3061):** Compile information and records to draw up purchase orders for procurement of materials and services. Sample job titles include:

- Purchasing Clerk
- Purchasing Specialist
- Procurement Assistant
- Warehouse Technician

**Property, Real Estate, and Community Association Managers (SOC 11-9141):** Plan, direct, or coordinate the selling, buying, leasing, or governance activities of commercial, industrial, or residential real estate properties. Includes managers of homeowner and condominium associations, rented or leased housing units, buildings, or land (including rights-of-way). Sample job titles include:

- Property Manager
- Resident Manager
- Apartment Manager
- On Site Property Manager
- Lease Administration Supervisor

**Real Estate Brokers (SOC 41-9021):** Operate real estate office, or work for commercial real estate firm, overseeing real estate transactions. Other duties usually include selling real estate or renting properties and arranging loans. Sample job titles include:

- Broker
- Broker Associate
- Realtor
- Real Estate Sales Associate
- Designated Broker
- Broker Assistant

**Real Estate Sales Agents (SOC 41-9022):** Rent, buy, or sell property for clients. Perform duties, such as study property listings, interview prospective clients, accompany clients to property site, discuss conditions of sale, and draw up real estate contracts. Includes agents who represent buyer. Sample job titles include:

- Realtor
- Real Estate Salesperson
- Sales Agent
- Real Estate Broker Associate

**Sales and Related Workers, All Other (SOC 41-9099):** All sales and related workers not listed separately. Data is not available for this type of title.

**Sales Representatives, Services, All Other (SOC 41-3099):** All services sales representatives not listed separately. Sample job title includes:

- Energy Auditors (41-3099.01): Buy or sell energy products on the behalf of residential or commercial customers or utilities. Negotiate and oversee contracts for energy sales.

**Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (SOC 41-4012):** Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.

Sample job titles include:

- Account Executive
- Account Representative
- Sales Consultant
- Outside Sales Representative
- Account Manager

**Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (SOC 43-6014):** Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers. Sample job titles include:

- Secretary
- School Attendance Secretary
- Office Assistant
- Department Secretary
- Administrative Associate
- Staff Assistant

**Skincare Specialists (SOC 39-5094):** Provide skincare treatments to face and body to enhance an individual's appearance. Includes electrologists and laser hair removal specialists. Sample job titles include:

- Esthetician
- Skin Care Specialist
- Facialist
- Spa Technician
- Skin Care Specialist

**Tax Preparers (SOC 13-2082):** Prepare tax returns for individuals or small businesses. Sample job titles include:

- Tax Specialist
- Tax Consultant
- Income Tax Preparer
- Tax Professional
- Tax Advisor

**Tellers (SOC 43-3071):** Receive and pay out money. Keep records of money and negotiable instruments involved in a financial institution's various transactions. Sample job titles include:

- Bank Teller
- Roving Teller
- Personal Banking Representative
- Member Services Representative
- Customer Service Associate
- Customer Relationship Specialist

**Training and Development Specialists (SOC 13-1151):** Design and conduct training and development programs to improve individual and organizational performance. May analyze training needs. Sample job titles include:

- Training Coordinator
- Training Specialist
- Technical Trainer
- Job Training Specialist
- Computer Training Specialist
- Corporate Trainer

## **APPENDIX C: BUSINESS AND ENTREPRENEURSHIP DEMAND AND SUPPLY DATA**

The following tables compare labor market demand and program supply by occupation. Because a TOP/CIP code may train for more than one occupation, simply aggregating all supply from all related codes may overestimate supply for that occupation. Therefore, the COE de-duplicated TOP codes that train for more than one occupation to avoid counting program supply more than once. This de-duplication process is denoted by the “Accounted for Above” statements in the tables on the following pages.

Additionally, the COE reviewed program data from the LaunchBoard<sup>7</sup> and the statewide COE Supply Table<sup>8</sup> and identified conflicting information. For certain occupations, LaunchBoard indicates that a college has a program for that occupation, but the COE Supply Table does not show program data for that college, and vice versa. These discrepancies are marked with the following:

+The COE Supply Table indicates that this college supplies awards for this TOP code, but this college is not listed in the LaunchBoard

\*LaunchBoard indicates that this college/school supplies awards for this TOP code, but this college is not listed in COE Supply Table

The demand and supply tables in the following pages have three categories:

1. **Supply Gap** – If Average Annual Openings exceed Average Annual Awards by more than 25 percent, then the cell is shaded in light green.
2. **Supply Met** – If Average Annual Openings is within 25 percent +/- of Average Annual Awards, then the cell is shaded in light blue.
3. **Oversupply** – If Average Annual Openings exceed the Average Annual Awards by more than 25 percent, then the cell is shaded in red.

<sup>7</sup> [calpassplus.org/LaunchBoard/Home.aspx](http://calpassplus.org/LaunchBoard/Home.aspx)

<sup>8</sup> [coeccc.net/COE/media/SupplyandDemandPageDocuments/Supply-2014-17\\_Feb-2018.xlsm](http://coeccc.net/COE/media/SupplyandDemandPageDocuments/Supply-2014-17_Feb-2018.xlsm)

**DEMAND AND SUPPLY DATA FOR BUSINESS AND ENTREPRENEURSHIP TOP MIDDLE-SKILL JOBS IN ORANGE COUNTY**

+ The COE Supply Table indicates that this college/school supplies awards for this TOP code, but this college is not listed in the LaunchBoard

\* LaunchBoard indicates that this college/school supplies awards for this TOP code, but this college is not listed in COE Supply Table

~ Noncredit awards

^ North Orange Continuing Education is also known as North Orange Adult in the California Community Colleges Chancellor's Office Management Information System

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)				
Bookkeeping, Accounting, and Auditing Clerks	2,383	Supply Gap	618	Accounting	0502.00	Coastline	73				
						Cypress	8				
						Fullerton	14				
						Golden West	23				
						Irvine	150				
						Orange Coast	24				
						North Orange Adult*	0				
						Saddleback	32				
						Santa Ana	274				
					Santiago Canyon	4					
					CIP 52.0302	InterCoast Colleges-Anaheim	7				
						Southern California Institute of Technology	9				
Sales Representatives, Services, All Other	2,009	Supply Gap	0	Sales and Salesmanship	0509.40	Orange Coast*	0				
First-Line Supervisors of Office and Administrative Support Workers	1,986	Supply Gap	238	Management Development and Supervision	0506.30	Cypress*	0				
						Coastline	207				
						Golden West*	0				
						Irvine+	1				
						Orange Coast*	0				
						Saddleback	25				
									CIP 52.0204	Allied American University	4
									CIP 52.0205	University of Phoenix-California	1
								E-Commerce (business emphasis)	0509.70	Fullerton*	0
										Golden West*	0
						Santiago Canyon*	0				
				Office Management	0514.40	No Programs	0				
Insurance Sales Agents	1,216	Supply Gap	0	Sales and Salesmanship	0509.40	Orange Coast*	0				
				Insurance	0512.00	No Programs	0				

**BUSINESS AND ENTREPRENEURSHIP**

Demand and Supply Analysis: Orange County

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Loan Officers	844	Supply Gap	4	Escrow	0511.10	Saddleback	4
						Irvine*	0
Executive Secretaries and Executive Administrative Assistants	779	Supply Gap	0	Office Technology/Office Computer Applications	0514.00	Already Accounted For	0
Real Estate Sales Agents	648	Supply Gap	49	Sales and Salesmanship	0509.40	Already Accounted For	0
				Real Estate	0511.00	Coastline	5
						Fullerton	1
						Irvine	13
						Orange Coast	4
						Saddleback	16
						Santiago Canyon	3
				CIP 52.1501	Allied American University	7	
Escrow	0511.10	Already Accounted For	0				
Administrative Services Managers	471	Oversupply	2,876	Business and Commerce, General	0501.00	Coastline	1
						Fullerton*	0
						Golden West	2
						North Orange Adult*	0
						Orange Coast	4
						Saddleback	11
						Santa Ana*	0
						Santiago Canyon*	0
				52.01.01	Argosy University-Orange County	1	
				Business Administration	0505.00	Coastline	760
						Cypress+	163
						Fullerton	182
						Golden West	145
						Irvine+	192
						Orange Coast+	330
Saddleback	194						
Santa Ana	196						
Santiago Canyon	184						
CIP 52.0201	Allied American University	59					
	Bristol University	2					
	Trident University International	1					

**BUSINESS AND ENTREPRENEURSHIP**

Demand and Supply Analysis: Orange County

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
						University of Phoenix-California	1
				Business Management	0506.00	Coastline	218
						Cypress	4
						Fullerton	108
						Golden West	6
						Irvine	9
						North Orange Adult~^	15
						Orange Coast	5
						Santa Ana	32
						Santiago Canyon	6
				Management Development and Supervision	0506.30	Already Accounted For	0
				Small Business and Entrepreneurship	0506.40	Coastline	5
						Cypress	8
						Fullerton+	2
						Golden West	1
						Irvine	11
Orange Coast*	0						
Saddleback	2						
Santa Ana	6						
Santiago Canyon+	2						
Other Business and Management	0599.00	North Orange Adult~^	8				
		Santa Ana*	0				
		Santiago Canyon*	0				
Office Management	0514.40	No Programs	0				
Property, Real Estate, and Community Association Managers	455	Supply Gap	0	Real Estate	0511.00	Already Accounted For	0
Training and Development Specialists	346	Supply Gap	7	Educational Technology	0860.00	Saddleback+	7
Sales and Related Workers, All Other	311	Supply Gap	0	Sales and Salesmanship	0509.40	Already Accounted For	0
Claims Adjusters, Examiners, and Investigators	289	Supply Gap	0	Insurance	0512.00	No Programs	0
Payroll and Timekeeping Clerks	274	Supply Gap	0	Accounting	0502.00	Already Accounted For	0

## BUSINESS AND ENTREPRENEURSHIP

Demand and Supply Analysis: Orange County

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Tax Preparers	243	Supply Gap	21	Accounting	0502.00	Already Accounted For	0
				Tax Studies	0502.10	Coastline*	0
						Golden West*	0
						Irvine	17
						Orange Coast*	0
						Saddleback	4
Santa Ana*	0						
Real Estate Brokers	212	Supply Gap	0	Real Estate	0511.00	Already Accounted For	0
				Escrow	0511.10	Already Accounted For	0
Advertising Sales Agents	211	Supply Gap	0	Advertising	0509.10	Orange Coast*	0
				Sales and Salesmanship	0509.40	Cypress*	0
						Already Accounted For	0
Compensation, Benefits, and Job Analysis Specialists	83	Supply Gap	0	N/A	N/A	No Programs	0
Appraisers and Assessors of Real Estate	79	Supply Gap	0	Real Estate	0511.00	Already Accounted For	0
				Escrow	0511.10	Already Accounted For	0
Credit Counselors	66	Supply Gap	0	Banking and Finance	0504.00	Coastline*	0
						Fullerton*	0
						Golden West*	0
						Santa Ana*	0
Brokerage Clerks	65	Supply Gap	0	Accounting	0502.00	Already Accounted For	0

**DEMAND AND SUPPLY DATA FOR BUSINESS AND ENTREPRENEURSHIP MIDDLE-SKILL JOBS WITH ENTRY-LEVEL WAGES BELOW CALIFORNIA FAMILY NEEDS CALCULATOR IN ORANGE COUNTY**

+The COE Supply Table indicates that this college/school supplies awards for this TOP code, but this college is not listed in the LaunchBoard

\*LaunchBoard indicates that this college/school supplies awards for this TOP code, but this college is not listed in COE Supply Table

~ Noncredit awards

^ North Orange Continuing Education is also known as North Orange Adult in the California Community Colleges Chancellor's Office Management Information System

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Customer Service Representatives	3,453	Supply Gap	0	Sales and Salesmanship	0509.40	Already Accounted For	0
				Customer Service	0518.00	Santa Ana*	0
				Consumer Services	1301.10	Orange Coast*	0
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	2,835	Supply Gap	222	Office Technology/Office Computer Applications	0514.00	Coastline	35
						Cypress	9
						Golden West	5
						Irvine	4
						North Orange Adult**^	0
						Saddleback	7
						Santa Ana	65
						Santiago Canyon	64
					CIP 52.0401	InterCoast Colleges-Anaheim	1
CIP 52.0408	United Education Institute-Anaheim	32					
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,770	Supply Gap	86	International Business and Trade	0508.00	Fullerton	1
						Orange Coast	10
						Saddleback	5
						Santa Ana	40
				Marketing and Distribution	0509.00	Coastline*	0
						Cypress	9
						Fullerton	1
						Golden West	1
						Irvine*	0
						Orange Coast	7
						Saddleback	2
						Santa Ana	2
						Santiago Canyon	4
CIP 52.1401	Allied American University	3					

## BUSINESS AND ENTREPRENEURSHIP

### Demand and Supply Analysis: Orange County

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)	
				Sales and Salesmanship	0509.40	Already Accounted For	0	
				Display	0509.60	Orange Coast	1	
Hairdressers, Hairstylists, and Cosmetologists	1,079	Oversupply	2,303	Cosmetology and Barbering	3007.00	Fullerton	120	
						Golden West	100	
						Saddleback	121	
						Santiago Canyon	65	
						Advance Beauty College	505	
					CIPs Included 12.0401; 12.0402; 12.0406; 12.0409; 12.0410; 12.0413	Asian-American International Beauty College	452	
						Career Academy of Beauty	141	
						Coastline Beauty College	114	
						Coba Cosmetology Academy	21	
						Colleen O'Haras Beauty Academy	62	
						CRU Institute of Cosmetology and Barbering	32	
						Hair California Beauty Academy	20	
						Paul Mitchell the School-Costa Mesa	169	
						Real Barbers College	72	
						Santa Ana Beauty Academy	33	
Santa Ana Beauty College	246							
Thanh Le College School of Cosmetology	30							
Loan Interviewers and Clerks	734	Supply Gap	0	Banking and Finance	0504.00	Already Accounted For	0	
Tellers	628	Supply Gap	0	Banking and Finance	0504.00	Already Accounted For	0	
Manicurists and Pedicurists	577	Supply Gap	0	Cosmetology and Barbering	3007.00	Already Accounted For	0	
Bill and Account Collectors	533	Supply Gap	0	Banking and Finance	0504.00	Already Accounted For	0	
Legal Secretaries	337	Supply Gap	231	Paralegal	Legal Office Technology	CIP 22.0301	South Coast College	5
						Coastline	71	
					1402.00	Fullerton	50	
						Irvine	30	
						Santa Ana	46	
					CIP 22.0302	Bristol University	5	
						InterCoast Colleges-Anaheim	1	
South Coast College	23							

## BUSINESS AND ENTREPRENEURSHIP

### Demand and Supply Analysis: Orange County

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Data Entry Keyers	300	Supply Gap	0	Office Technology/Office Computer Applications	0514.00	Already Accounted For	0
Parts Salespersons	255	Supply Gap	0	Sales and Salesmanship	0509.40	Already Accounted For	0
Human Resources Assistants, Except Payroll and Timekeeping	193	Supply Gap	0	N/A	N/A	No Programs	0
Skincare Specialists	154	Supply Gap	0	Cosmetology and Barbering	3007.00	Already Accounted For	0
Procurement Clerks	99	Supply Gap	0	Purchasing	0509.20	Coastline*	0
				Office Technology/Office Computer Applications	0514.00	Already Accounted For	0
Barbers	82	Supply Gap	0	Cosmetology and Barbering	3007.00	Already Accounted For	0