

Program Endorsement Brief: 0799.00/Other Information Technology
Artificial Intelligence Foundation Certificate of Achievement
 Los Angeles/Orange County Center of Excellence, April 2021

Summary Analysis

Program Endorsement:	Endorsed: All Criteria Met <input type="checkbox"/>	Endorsed: Some Criteria Met <input checked="" type="checkbox"/>	Not Endorsed <input type="checkbox"/>
Program Endorsement Criteria			
Supply Gap:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Living Wage: (Entry-Level, 25th)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Education:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Emerging Occupation(s)			
	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

The Los Angeles/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 one middle-skill occupation: *project management specialists and business operations specialists, all other* (13-1198) and one above middle-skill occupation: *database administrators and architects* (15-1245). Middle-skill occupations typically require some postsecondary education, but less than a bachelor’s degree.¹ Since artificial intelligence (AI) is utilized in a wide range of business operations, and there is no definitive standard occupational code associated with AI, data is provided for *project management specialists and business operations specialists, all other* (13-1198). Therefore, demand data in this report is overstated. 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 occupations in the region. While occupations have entry-level wages exceeding the living wage in both Los Angeles and Orange counties, they typically require a bachelor’s degree. **Therefore, due to some of the criteria being met, the COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, there is projected to be **7,404 jobs available annually** in the region due to new job growth and replacements, **which is**

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.

more than the 315 awards conferred annually by educational institutions in the region.

- **Living Wage Criteria** – Both occupations have entry-level wages above the Los Angeles County living wage (\$15.04/hour).²
- **Educational Criteria** – Occupations studied in this report **typically require a bachelor's degree**.
 - National-level educational attainment data shows that between 18.6% and 22.2% of workers in the field have completed some college or an associate degree.

Supply:

- There are **eight community colleges** in the LA/OC region that issue awards related to the two occupations of interest, conferring an average of **148 awards annually** between 2016 and 2019.
- Between 2014 and 2017, there was an average of **167 awards conferred annually** in related training programs by non-community college institutions.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for the two occupations of interest. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 1% through 2024. There will be approximately 7,400 job openings per year through 2024 due to new job growth and replacements.

Since artificial intelligence (AI) is utilized in a wide range of business operations, and there is no definitive standard occupational code associated with AI, data is provided for *project management specialists and business operations specialists, all other* (13-1198). Therefore, demand data in this report is overstated.

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.

² Living wage data was pulled from California Family Needs Calculator on 3/29/2021. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties³

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	59,420	60,035	615	1%	5,339
Orange	22,917	23,180	263	1%	2,065
Total	82,337	83,215	878	1%	7,404

Wages

The labor market endorsement in this report considers the entry-level hourly wages for the two occupations of interest, as they relate to the county’s living wage. Orange County wages are included below in order to provide a complete analysis of the LA/OC region. Detailed wage information, by county, is included in Appendix A.

Los Angeles County: Both occupations have entry-level wages above the living wage for one adult (\$15.04 in Los Angeles County). Typical entry-level hourly wages are in a range between \$25.47 and \$33.58. Experienced workers can expect to earn wages between \$49.67 and \$60.77, which are higher than the living wage estimate.

Orange County: Both occupations have entry-level wages above the living wage for one adult (\$17.36 in Orange County). Typical entry-level hourly wages are in a range between \$24.83 and \$32.32. Experienced workers can expect to earn wages between \$48.40 and \$58.51, which are higher than the living wage estimate.

Job Postings

There were 10,064 online job postings related to database administrators and architects, and project management specialists and business operations specialists, all other listed in the past 12 months. The highest number of job postings were for data engineer, senior data engineer, and project manager. The top skills were project management, SQL and budgeting. The top employers, by number of job postings, in the region were Anthem Blue Cross, Accenture, and IBM.

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.

Educational Attainment

Both occupations listed in this report typically require a bachelor’s degree. According to national-level educational attainment data, between 18.6% and 22.2% of workers in the field have completed some college or an associate degree. Of the 63% of job postings listing a minimum education requirement in Los Angeles/Orange County, 7% (453) requested some high school or

³ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

vocational training, 3% (199) requested an associate degree, and 90% (5,735) requested a bachelor's degree.

Educational Supply

Community College Supply—Exhibit 2 shows the annual and three-year average number of awards conferred by community colleges in the related TOP codes: Information Technology, General (0701.00), and Other Information Technology (0799.00). The college with the most completions in the region is: Mt. San Antonio. Over the past 12 months, there was one other related program recommendation requests from regional community colleges.

Exhibit 2: 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
0701.00	Information Technology, General	East LA	8	15	23	15
		LA Harbor	7	6	-	4
		LA Mission	4	1	1	2
		Long Beach	27	25	34	29
		Mt San Antonio	61	79	74	71
		Santa Monica	-	-	39	13
		West LA	3	4	4	4
		LA Subtotal	110	130	175	138
		Cypress	1	-	-	-
		OC Subtotal	1	-	-	-
Supply Subtotal/Average			111	130	175	138
0799.00	Other Information Technology	LA Harbor	1	1	-	1
		Mt San Antonio	9	5	13	9
		LA Subtotal	10	6	13	10
Supply Subtotal/Average			10	6	13	10
Supply Total/Average			121	136	188	148

Non-Community College Supply—Since the two occupations in this report typically require a bachelor’s degree, it is important to consider the supply from non-community college institutions in the region that provide training programs for these occupations. Exhibit 3 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes: 11.0101/Computer and Information, and 11.9999/Computer and Information Sciences and Support Services, Other.

Due to different data collection periods, the most recent three-year period of available data is from 2014 to 2017. Between 2014 and 2017, non-community college educational institutions in the region conferred an average of 167 awards annually in related training programs.

Exhibit 3: Regional non-community college awards, 2014-2017

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
11.0101	Computer and Information	ABCO Technology	15	-	-	5
		Azusa Pacific University	10	20	19	16
		Brand College	1	2	-	1
		Brandman University	19	14	26	20
		California Institute of Technology	48	56	-	35
		Chapman University	6	7	5	6
		Loyola Marymount University	15	16	19	17
		Pacific States University	-	2	1	1
		University of California-Irvine	31	3	1	12
		University of La Verne	14	21	19	18
		University of the People	-	36	57	31
Supply Subtotal/Average			159	177	147	161
11.9999	Computer and Information Sciences and Support Services, Other	Brand College	1	-	1	1
		Mt Sierra College	9	4	2	5
		Pitzer College	-	-	1	-
Supply Subtotal/Average			10	4	4	6
Supply Total/Average			169	181	151	167

Appendix A: Occupational demand and wage data by county

Exhibit 4. Los Angeles County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Project Management Specialists and Business Operations Specialists, All Other (13-1198)	56,391	56,897	506	1%	5,123	\$25.47	\$35.21	\$49.67
Database Administrators and Architects (15-1245)	3,029	3,138	109	4%	217	\$33.58	\$45.11	\$60.77
Total	59,420	60,035	615	1%	5,339			

Exhibit 5. Orange County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Project Management Specialists and Business Operations Specialists, All Other (13-1198)	21,676	21,893	218	1%	1,976	\$24.83	\$34.32	\$48.40
Database Administrators and Architects (15-1245)	1,241	1,286	45	4%	88	\$32.32	\$43.42	\$58.51
Total	22,917	23,180	263	1%	2,065			

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Project Management Specialists and Business Operations Specialists, All Other (13-1198)	78,067	78,791	724	1%	7,099	Bachelor's degree
Database Administrators and Architects (15-1245)	4,270	4,424	154	4%	305	Bachelor's degree
Total	82,337	83,215	878	1%	7,404	

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
- 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)

For more information, please contact:

Luke Meyer, Director
 Los Angeles/Orange County Center of Excellence
lmeyer7@mtsac.edu

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