![COE Centers of Excellence for Labor Market Research logo]

Program Endorsement Brief: 0707.20 – Database Design and Administration
Database Management
Los Angeles/Orange County Center of Excellence, August 2021

Summary Analysis

Program Endorsement:	Endorsed: All Criteria Met	☒	Endorsed: Some Criteria Met	☐	Not Endorsed	☐
Program Endorsement Criteria						
Supply Gap:	Yes ☑				No ☐	
Living Wage: (Entry-Level, 25th)	Yes ☑				No ☐	
Education:	Yes ☑				No ☐	
Emerging Occupation(s)						
Yes ☐					No ☑	

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 two middle-skill occupations: *computer network support specialists* (15-1231); and *computer user support specialists* (15-1232); 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] 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 the three occupations of interest in the region. In addition to the majority of annual openings for the occupations in this report typically requiring some type of community college training, the entry-level wages for all three occupations exceed the living wage in both counties. **Therefore, due to all 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 **2,731 jobs available annually** in the region due to new job growth and replacements, **which is more than the 1,351 awards conferred annually** by educational institutions in the region.

- *Living Wage Criteria* – In Los Angeles County, all three occupations have entry-level wages above the county's living wage ($15.04/hour).[2]

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[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.

[2] Living wage data was pulled from California Family Needs Calculator on 7/29/2021 For more information, visit the California Family Needs Calculator website: https://insightcced.org/2018-family-needs-calculator/.

- *Educational Criteria* – The Bureau of Labor Statistics (BLS) lists some college, no degree as the typical entry-level education for c*omputer user support specialists* (15-1232); an associate degree for c*omputer network support specialists* (15-1231); and a bachelor's degree for *database administrators and architects* (15-1245).
  - Furthermore, national-level educational attainment data indicates **between 19% and 39% of workers in the field have completed some college or an associate degree.**

Supply:
- Between 2017 and 2020, **21 community colleges** in the LA/OC region issued awards in programs that have historically trained for the occupations of interest, conferring an average of **693 awards.**
- Between 2016 and 2019, non-community college institutions in the region conferred an average of **658 awards** in programs crosswalked to the TOP of interest.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for the three occupations of interest. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 3% through 2024. There will be more than 2,700 job openings per year through 2024 due to job growth and replacements.

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 Counties[3]

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	25,296	26,036	740	3%	1,896
Orange	10,979	11,392	413	4%	834
Total	**36,275**	**37,428**	**1,153**	**3%**	**2,731**

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[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.

Wages

The labor market endorsement in this report considers the hourly wages for the three occupations of interest in Los Angeles County, 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: All three occupations have entry-level wages **<u>above</u>** the living wage for one adult ($15.04 in Los Angeles County). Typical entry-level hourly wages are in a range between $21.62 and $33.58. Experienced workers can expect to earn wages between $34.49 and $60.77, which are higher than the living wage estimate.

Orange County: All three occupations have entry-level wages **<u>above</u>** the living wage for one adult ($17.36 in Orange County). Typical entry-level hourly wages are in a range between $21.12 and $32.32. Experienced workers can expect to earn wages between $33.72 and $58.51, which are higher than the living wage estimate.

Job Postings

Over the past 12 months, there have been 11,160 online job postings related to the three occupations studied in this report. The highest number of job postings were for data engineer, IT support specialist, and IT technician. The top skills were technical support, customer service, and repair. The top employers, by number of job postings, in the region were Best Buy, Anthem Blue Cross, and Microsoft. Of the 59% of job postings listing a minimum education requirement in Los Angeles/Orange County, 28% (1,850) requested a high school or vocational training, 11% (723) requested an associate degree, and 61% (4,048) requested a bachelor's degree.

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

The Bureau of Labor Statistics (BLS) lists some college, no degree as the typical entry-level education for *computer user support specialists* (15-1232); an associate degree for *computer network support specialists* (15-1231); and a bachelor's degree for *database administrators and architects* (15-1245). National-level educational attainment data indicates between 19% and 39% of workers in the field have completed some college, no degree or an associate degree.

Educational Supply

Community College Supply — Exhibit 2 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for the occupations of interest. The colleges with the most completions in the region are Mt. San Antonio, Long Beach, and Coastline. Over the past 12 months, there were 10 other related program recommendation requests from regional community colleges.

Exhibit 2: Regional community college awards (certificates and degrees), 2017-2020

TOP	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
0701.00	Information Technology, General	East LA	15	23	10	16
		LA Harbor	6	-	-	2
		LA Mission	1	1	3	2
		Long Beach	25	34	64	41
		Mt San Antonio	79	74	90	81
		Santa Monica	-	39	-	13
		West LA	4	4	5	4
		LA Subtotal	**130**	**175**	**172**	**159**
		Supply Subtotal/Average	**130**	**175**	**172**	**159**
0707.20	Database Design and Administration	Citrus	-	1	1	1
		Long Beach	1	3	1	2
		Mt San Antonio	4	11	12	9
		Pasadena	-	-	4	1
		Santa Monica	2	1	5	3
		LA Subtotal	**7**	**16**	**23**	**15**
		Santa Ana	4	1	8	4
		OC Subtotal	**4**	**1**	**8**	**4**
		Supply Subtotal/Average	**11**	**17**	**31**	**20**
0708.00	Computer Infrastructure and Support	Cerritos	-	-	4	1
		Glendale	-	-	3	1
		LA City	-	-	3	1
		LA Harbor	1	1	1	1
		LA Mission	-	2	12	5
		LA Valley	8	5	2	5
		Long Beach	1	3	8	4
		Mt San Antonio	20	24	24	23
		Pasadena	-	1	1	1
		Rio Hondo	-	-	9	3
		West LA	-	4	15	6
		LA Subtotal	**30**	**40**	**82**	**51**
		Coastline	65	49	46	53
		Cypress	1	2	3	2
		Orange Coast	-	-	7	2
		OC Subtotal	**66**	**51**	**56**	**58**

TOP	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
		Supply Subtotal/Average	**96**	**91**	**138**	**108**
0708.10	Computer Networking	Cerritos	8	11	9	9
		Glendale	6	3	3	4
		LA City	37	23	-	20
		LA Pierce	23	39	20	27
		Long Beach	27	55	47	43
		Mt San Antonio	2	8	11	7
		Rio Hondo	-	5	7	4
		West LA	43	77	48	56
		LA Subtotal	**146**	**221**	**145**	**171**
		Coastline	12	38	59	36
		Cypress	37	70	95	67
		Irvine Valley	12	11	21	15
		Saddleback	17	10	21	16
		Santa Ana	7	14	12	11
		OC Subtotal	**85**	**143**	**208**	**145**
		Supply Subtotal/Average	**231**	**364**	**353**	**316**
0708.20	Computer Support	Citrus	-	-	1	0
		Glendale	3	10	7	7
		LA Pierce	7	9	8	8
		Long Beach	1	8	14	8
		Pasadena	3	7	30	13
		LA Subtotal	**14**	**34**	**60**	**36**
		Cypress	1	3	5	3
		Santa Ana	10	9	-	6
		OC Subtotal	**11**	**12**	**5**	**9**
		Supply Subtotal/Average	**25**	**46**	**65**	**45**
0709.00	World Wide Web Administration	Glendale	9	6	7	7
		LA Pierce	5	9	-	5
		Long Beach	4	22	24	17
		West LA	24	13	9	15
		LA Subtotal	**42**	**50**	**40**	**44**
		Saddleback	-	-	2	1
		OC Subtotal	**-**	**-**	**2**	**1**
		Supply Subtotal/Average	**42**	**50**	**42**	**45**
		Supply Total/Average	**535**	**743**	**801**	**693**

Non-Community College Supply — It is important to consider the supply from non-community college institutions in the region that provide training programs for the occupations of interest. Exhibit 3 shows the annual and three-year average number of awards conferred by institutions in programs crosswalked to the TOP in Exhibit 2. Due to different data collection periods, the most recent three-year period of available data is from 2016 to 2019. Between 2016 and 2019, non-community college institutions in the region conferred an average of 658 awards annually in related training programs.

Exhibit 3: Regional non-community college awards, 2016-2019

CIP	Program	Institution	2016-17 Awards	2017- 18 Awards	2018- 19 Awards	3-Year Average
11.0101	Computer and Information Sciences, General	Azusa Pacific University	19	26	30	25
		Brand College	-	2	-	1
		Brandman University	26	20	20	22
		Chapman University	5	12	13	10
		Loyola Marymount University	19	42	32	31
		Pacific States University	1	-	2	1
		The Master's University and Seminary	7	6	7	7
		University of California-Irvine	1	-	1	1
		University of La Verne	19	18	39	25
		University of the People	57	100	80	79
		Vanguard University of Southern California	-	1	-	0
11.0199	Computer and Information Sciences, Other	Antioch University-Los Angeles	20	47	4	24
		Brand College	2	-	2	1
		California State University-Dominguez Hills	66	59	55	60
		California State University-Northridge	77	77	87	80

CIP	Program	Institution	2016-17 Awards	2017-18 Awards	2018-19 Awards	3-Year Average
11.0802	Data Modeling/ Warehousing and Database Administration	ABCO Technology	3	6	7	5
		University of Phoenix-California	8	4	1	4
		Brand College	2	-	2	1
		DeVry University-California	135	106	86	109
		Mt Sierra College	5	4	-	3
		University of Phoenix-California	27	18	3	16
11.1001	Network and System Administration/ Administrator	ABCO Technology	-	13	5	6
		Brand College	2	6	23	10
		California Intercontinental University	-	1	3	1
		University of Phoenix-California	1	12	13	9
11.1003	Computer and Information Systems Security/ Information Assurance	Azusa Pacific University	3	-	-	1
		Learnet Academy Inc	48	17	-	22
		Mt Sierra College	8	13	-	7
		University of Phoenix-California	71	42	32	48
11.1004	Web/ Multimedia Management and Webmaster	ABCO Technology	12	17	24	18
		Pepperdine University	-	2	-	1
		University of Phoenix-California	4	-	1	2
11.1006	Computer Support Specialist	Southern California Institute of Technology	16	26	25	22
		University of Phoenix-California	1	2	-	1
15.1202	Computer Technology/ Computer Systems Technology	Learnet Academy Inc	11	1	-	4
Supply Total/Average			676	700	597	658

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)
Computer Network Support Specialists (15-1231)	4,476	4,583	107	2%	333	$25.63	$32.52	$41.26
Computer User Support Specialists (15-1232)	17,791	18,316	525	3%	1,347	$21.62	$27.18	$34.49
Database Administrators and Architects (15-1245)	3,029	3,138	109	4%	217	$33.58	$45.11	$60.77
Total	**25,296**	**26,036**	**740**	**3%**	**1,896**			

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)
Computer Network Support Specialists (15-1231)	1,852	1,906	54	3%	137	$25.03	$31.78	$40.37
Computer User Support Specialists (15-1232)	7,886	8,200	314	4%	608	$21.12	$26.56	$33.72
Database Administrators and Architects (15-1245)	1,241	1,286	45	4%	88	$32.32	$43.42	$58.51
Total	**10,979**	**11,392**	**413**	**4%**	**834**			

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
Computer Network Support Specialists (15-1231)	6,328	6,489	160	3%	471	Associate degree
Computer User Support Specialists (15-1232)	25,676	26,515	839	3%	1,955	Some college, no degree
Database Administrators and Architects (15-1245)	4,270	4,424	154	4%	305	Bachelor's degree
Total	**36,275**	**37,428**	**1,153**	**3%**	**2,731**	

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)

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