C·O·E CENTERS OF EXCELLENCE
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Program Endorsement Brief: Information Technology (TOP 07)
Information Systems Management Certificate
Los Angeles/Orange County Center of Excellence, March 2019

Summary:

The Los Angeles/Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide regional labor market supply and demand data related to information systems. 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 relevant occupations.

The following summarizes key findings from this data brief:

- The number of jobs for information systems-related occupations is projected to increase by 2% through 2022; nearly 4,200 job openings will be available annually due to new job growth and replacement need.
- Over the past 12 months, there have been 19,910 middle-skill job postings related to information systems occupations in Los Angeles and Orange Counties.
- Twenty-six other related program recommendation requests were received in 2018 from regional community colleges.
- All 28 community colleges in the region have existing programs that have historically trained for the occupations of interest.
- Between 2014 and 2017, community colleges in the region conferred an average of 876 awards annually (associate degrees and certificates) in related training programs.

Occupational Demand—In Los Angeles/Orange County, the number of jobs for information systems-related occupations is projected to increase by 2% through 2022. There will be nearly 4,200 job openings per year due to new job growth and replacement need (e.g. retirements).

Exhibit 1: Occupational demand in Los Angeles and Orange Counties[1]

Geography	2017 Jobs	2022 Jobs	2017-2022 Change	2017-2022 % Change	Annual Openings
Los Angeles	41,831	42,612	781	2%	2,802
Orange	19,507	20,234	727	4%	1,390
Total	**61,338**	**62,846**	**1,508**	**2%**	**4,192**

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[1] 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—Entry-level wages for information systems-related occupations in the region are between $21.42 and $32.25. Entry-level wages for the four occupations of interest are higher than the MIT Living hourly wage for one adult in the region ($13.54 in Los Angeles County and $15.31 in Orange County).

Job Postings—Over the last 12 months, there have been 19,910 middle-skill job postings for the four information systems-related occupations. The majority of job postings are for systems administrators, systems analysts, data engineers, database administrators, and network administrators. Top specialized skills include: SQL, Oracle, Linux, and Python. The top employers, by number of job postings, in the region include: Northrop Grumman, Raytheon, SMCI, Accenture, and Deloitte.

Educational Attainment—The BLS lists a Bachelor's degree as the typical entry-level education for the four information systems-related occupations. The national-level educational attainment data indicates between 16% and 40% of workers in the field have completed some college or an associate degree. In Los Angeles/Orange County, 87% of job postings request a Bachelor's degree.

Community College Supply—Appendix A 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. Last year, there were 26 other related program recommendation requests from regional community colleges.

Appendix A: Regional community college awards (certificates and degrees), 2014-2017

TOP Code	Program	College	2014-15 Awards	2015-16 Awards	2016-2017 Awards	3-Year Award Average
0701.00	Information Technology, General	Coastline	1	-	-	1
		Cypress	-	-	1	1
		East LA	-	4	8	6
		LA Mission	-	-	4	4
		LA Southwest	-	3	-	3
		Long Beach	7	10	27	15
		Mt San Antonio	104	83	61	83
		West LA	2	2	3	2
		Subtotal/Average	**114**	**102**	**104**	**107**
0702.00	Computer Information Systems	Citrus	-	-	5	5
		Compton	2	2	1	2
		Cypress	5	4	5	5
		East LA	16	14	14	15
		El Camino	12	24	15	17
		Fullerton	7	7	7	7
		Glendale	1	3	2	2
		LA City	2	4	2	3

TOP Code	Program	College	2014-15 Awards	2015-16 Awards	2016-2017 Awards	3-Year Award Average
		LA Harbor	2	-	-	2
		LA Mission	4	9	3	5
		LA Trade-Tech	19	14	22	18
		Pasadena	-	-	2	2
		Rio Hondo	9	10	10	10
		Santa Ana	35	5	18	19
		Santiago Canyon	2	2	2	2
		West LA	11	5	10	9
		Subtotal/Average	**127**	**103**	**118**	**116**
0702.10	Software Applications	Cerritos	2	2	4	3
		Coastline	15	7	9	10
		Cypress	-	2	-	2
		Fullerton	-	-	1	1
		Irvine	15	26	28	23
		LA City	-	-	2	2
		LA Mission	3	-	2	3
		LA Southwest	3	1	2	2
		Mt San Antonio	1	1	2	1
		Pasadena	-	-	2	2
		Saddleback	7	9	9	8
		Santa Monica	12	21	17	17
		Subtotal/Average	**58**	**69**	**78**	**68**
0707.00	Computer Software Development	Cypress	-	2	1	2
		Golden West	4	4	7	5
		Orange Coast	8	4	5	6
		Pasadena	-	4	4	4
		Saddleback	3	3	3	3
		Subtotal/Average	**15**	**17**	**20**	**17**
0707.10	Computer Programming	Cerritos	1	1	1	1
		Coastline	1	3	-	2
		Cypress	19	11	27	19
		East LA	8	4	5	6
		Glendale	3	4	1	3
		Irvine	18	29	16	21
		LA City	-	-	43	43
		LA Mission	1	1	2	1
		LA Pierce	8	4	5	6

TOP Code	Program	College	2014-15 Awards	2015-16 Awards	2016-2017 Awards	3-Year Award Average
		LA Southwest	1	1	2	1
		LA Valley	7	12	26	15
		Long Beach	1	1	-	1
		Mt San Antonio	72	66	68	69
		Orange Coast	4	10	29	14
		Pasadena	5	6	1	4
		Santa Monica	24	29	25	26
		Subtotal/Average	**173**	**182**	**251**	**202**
0707.20	Database Design and Administration	Mt San Antonio	3	7	11	7
		Santa Monica	1	1	2	1
		Subtotal/Average	**4**	**8**	**13**	**8**
0707.30	Computer Systems Analysis	Cerritos	1	3	6	3
		Cypress	1	8	-	5
		Subtotal/Average	**2**	**11**	**6**	**6**
0708.00	Computer Infrastructure and Support	Citrus	6	9	-	8
		Coastline	-	93	67	53
		Cypress	10	7	1	6
		LA Valley	-	-	3	3
		Long Beach	1	1	1	1
		Mt San Antonio	15	12	16	14
		Subtotal/Average	**32**	**122**	**88**	**81**
0708.10	Computer Networking	Cerritos	5	5	10	7
		Coastline	114	14	20	49
		Cypress	30	27	28	28
		Fullerton	1	-	-	1
		Irvine	27	12	19	19
		LA City	9	6	11	9
		LA Pierce	16	21	32	23
		Long Beach	12	11	25	16
		Mt San Antonio	11	2	9	7
		Saddleback	15	23	21	20
		West LA	35	55	47	46
		Subtotal/Average	**275**	**176**	**222**	**224**
0708.20	Computer Support	Cypress	3	8	3	5
		Glendale	1	4	2	2
		LA Pierce	6	12	12	10

TOP Code	Program	College	2014-15 Awards	2015-16 Awards	2016-2017 Awards	3-Year Award Average
		Long Beach	2	-	-	2
		Pasadena	10	12	1	8
		Subtotal/Average	**22**	**36**	**18**	**25**
0709.00	World Wide Web Administration	Glendale	6	3	3	4
		LA Pierce	4	1	5	3
		Long Beach	-	2	5	4
		Saddleback	1	-	5	3
		West LA	10	9	7	9
		Subtotal/Average	**21**	**15**	**25**	**20**
		Total/Average	**843**	**841**	**943**	**876**

Appendix B: Occupational demand and wage data by county

Exhibit 2. Los Angeles County

Occupation (SOC)	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Computer Systems Analysts (15-1121)	14,855	15,213	358	2%	1,021	$25.69	$43.21	$67.82
Software Developers, Systems Software (15-1133)	14,528	14,658	130	1%	947	$31.69	$58.04	$85.60
Database Administrators (15-1141)	2,514	2,650	136	5%	189	$21.43	$46.64	$72.13
Network and Computer Systems Administrators (15-1142)	9,933	10,091	158	2%	645	$23.89	$42.67	$64.12
Total	**41,831**	**42,612**	**781**	**2%**	**2,802**			

Exhibit 3. Orange County

Occupation (SOC)	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Computer Systems Analysts (15-1121)	5,747	6,033	286	5%	430	$28.09	$44.25	$67.49
Software Developers, Systems Software (15-1133)	8,008	8,238	230	3%	557	$33.04	$53.70	$80.98
Database Administrators (15-1141)	1,305	1,374	69	5%	98	$21.39	$42.10	$62.76
Network and Computer Systems Administrators (15-1142)	4,447	4,590	143	3%	305	$23.52	$42.52	$63.12
Total	**19,507**	**20,234**	**727**	**4%**	**1,390**			

Exhibit 4. Los Angeles and Orange Counties

Occupation (SOC)	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Computer Systems Analysts (15-1121)	20,603	21,246	643	3%	1,450	$26.51	$43.50	$68.01
Software Developers, Systems Software (15-1133)	22,535	22,896	361	2%	1,503	$32.25	$56.44	$84.04
Database Administrators (15-1141)	3,819	4,024	205	5%	287	$21.42	$44.96	$68.61
Network and Computer Systems Administrators (15-1142)	14,380	14,680	300	2%	951	$23.77	$42.61	$63.88
Total	**61,337**	**62,847**	**1,510**	**2%**	**4,192**			

Appendix C: Sources

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

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