

Program Endorsement Brief: 0934.10/Computer Electronics & 0934.30/Telecommunications Technology
Computer Networking Technology Fundamentals
Los Angeles/Orange County Center of Excellence, October 2020

Summary Analysis

Program Endorsement:	Endorsed: All Criteria Met	<input checked="" type="checkbox"/>	Endorsed: Some Criteria Met	<input 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 checked="" type="checkbox"/>	No	<input 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 three middle-skill occupations: *computer network support specialists* (15-1231), *computer user support specialists* (15-1232), and *computer, automated, teller, and office machine repairers* (49-2011). 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 computer networking technology occupations in the LA/OC region. **Therefore, the COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** - Over the next five years, there are projected to be **3,793 jobs available annually** in the LA/OC region due to job growth and replacements, **which is more than the 324 awards conferred annually** by educational institutions in the region.

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.

- **Living Wage Criteria** - Within Los Angeles County, **87% of the annual job openings** for these computer networking technology occupations have **entry-level wages above the county's living wage** (\$15.04/hour).²
- **Education Criteria** - Within the LA/OC region, **all of the annual job openings** for occupations related to computer networking technology **typically require a community college education**.
 - Furthermore, national-level educational attainment data indicates **between 41.2% and 52.1% of workers in the field have completed some college or an associate degree**.

Supply:

- There are **11 community colleges** in the LA/OC region that issue awards related to electronics and electric technology programs, conferring an average of **121 awards annually** between 2016 and 2019.
- Between 2014 and 2017, there was an average of **203 awards conferred annually** in related training programs by non-community college institutions throughout the LA/OC region.

Occupational Demand

Exhibit 1 displays the five-year occupational demand projections for computer networking technology occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 5% through 2024. There will be nearly 3,800 job openings per year through 2024 due to job growth and replacements in the LA/OC region.

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 Counties³

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	27,054	28,370	1,316	5%	2,653
Orange	11,792	12,292	500	4%	1,140
Total	38,847	40,662	1,815	5%	3,793

² Living wage data was pulled from California Family Needs Calculator on 9/28/2020. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

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 entry-level hourly wages for these computer networking technology occupations 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—The majority, 87%, of the annual openings for these occupations have entry-level wages above the living wage for one adult (\$15.04 in Los Angeles County).⁴ Typical entry-level hourly wages are in a range between \$14.31 and \$25.22. Experienced workers can expect to earn wages between \$24.04 and \$40.74, which are higher than the living wage estimate. Los Angeles County’s average wages are below the average statewide wage of \$32.97 for these occupations.

Orange County— The majority, 84%, of the annual openings for these 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 \$16.51 and \$25.29. Experienced workers can expect to earn hourly wages between \$26.78 and \$40.85, which are higher than the living wage in Orange County. Orange County’s average wages are below the average statewide wage of \$32.97 for these occupations.

Job Postings—Over the last twelve months, there were 9,086 job postings for the computer networking technology occupations in the region. The job titles with the most postings were IT support specialist, desktop support technician, IT technician, IT specialist, and IT support technician. The top skills were: technical support, customer service, repair, help desk support, and IT support. The top employers, by the number of job postings, in the region were: Best Buy, Anthem, Inc., Northrop Grumman, IBM, and UCLA.

The following section details job posting demand for certifications related to computer networking technology. The CompTIA A+ certification is not found in Labor Insights/Jobs (Burning Glass), the job posting search engine utilized in this report, and is therefore not included in this report.

CompTIA Network+: Over the last twelve months, there were 1,093 employer job postings that sought candidates with their CompTIA Network+ certification. The top three occupations, by the number of job postings, were *computer user support specialists*, *network and computer systems administrators*, and *information security analysts*.

CompTIA Security+: Over the last twelve months, there were 2,148 employer job postings that sought candidates with their CompTIA Security+ certification. The top three occupations, by the number of job postings, were *network and computer systems administrators*, *information security analysts*, and *computer user support specialists*.

CompTIA Server+ Over the last twelve months, there were 82 employer job postings that sought candidates with their CompTIA Server+ certification. The top three occupations, by the number of

⁴ Living wage data was pulled from California Family Needs Calculator on 9/28/2020. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

job postings, were *computer user support specialists, software developers, applications, and network and computer systems administrators.*

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 and computer, automated teller, and office machine repairers* and an associate degree for *computer network support specialists*. The national-level educational attainment data indicates between 41.2% and 52.1% of workers in the field have completed some college or an associate degree. Of the 53% of computer networking technology job postings listing a minimum education requirement in Los Angeles/Orange County, 33% (1,594) requested a high school diploma and 12% (577) requested an associate degree, and 55% (2,657) request a bachelor’s degree.

Educational Supply

This report utilizes the TOP codes, Computer Electronics (0934.10) and Telecommunications Technology (0934.30), to satisfy the educational supply portion of this report as per the program recommendation process. These TOP codes are traditionally reserved for engineering and industrial technology programs and therefore the supply from other institutions may not reflect the actual supply for computer networking technology occupations. The TOP codes most frequently utilized for programs related to computer networking technology include Computer Infrastructure and Support (0708.00), Computer Networking (0708.10), and Computer Support (0708.20). The COE recommends using these TOP codes for program development as these programs typically provide workers with IT-specific certification preparation.

Community College Supply—Exhibit 2 displays the annual and three-year average number of awards conferred by LA/OC regional community colleges in the related TOP codes: Computer Electronics (0934.10) and Telecommunications Technology (0934.30). The colleges with the most completions in the region are East LA, LA Trade, and Saddleback. Over the past 12 months, there were no other related program recommendation requests from LA/OC regional community colleges.

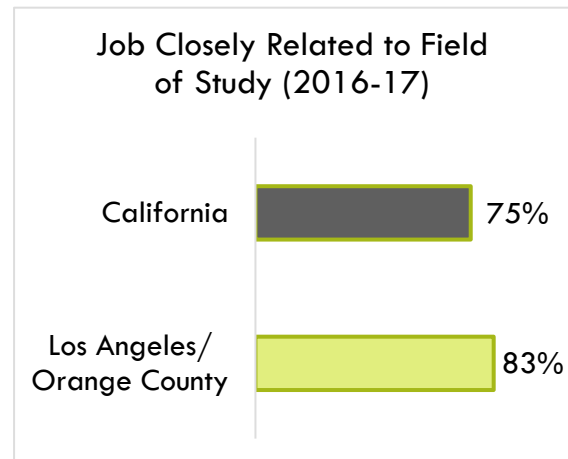
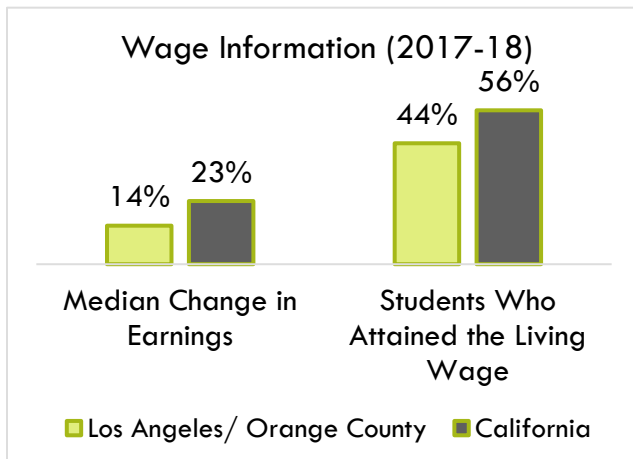
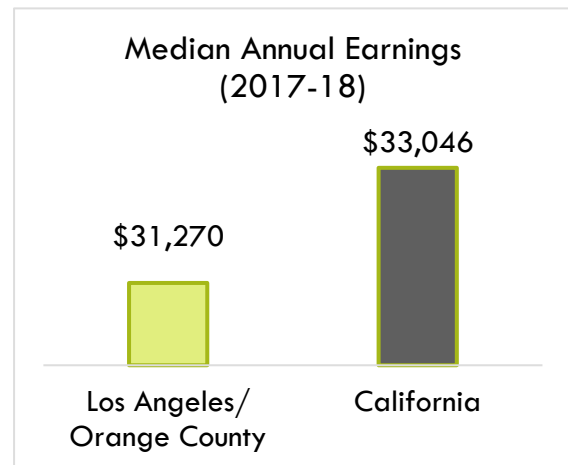
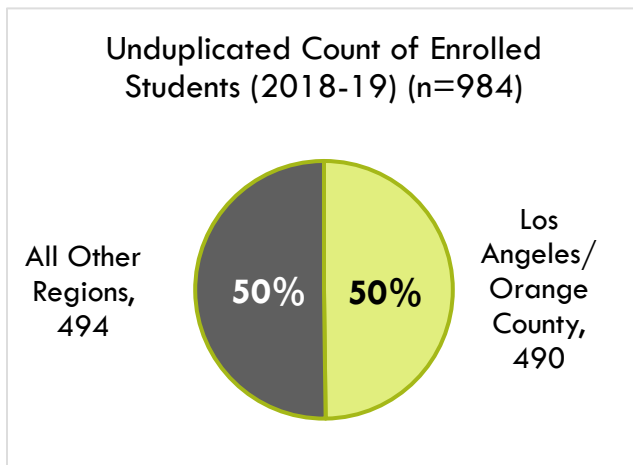
Exhibit 2: Regional community college awards (certificates and degrees), 2016-2019

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
0934.10	Computer Electronics	East LA	-	50	35	28
		El Camino	15	13	15	14
		LA City	5	1	-	2
		LA Harbor	3	-	-	1
		LA Trade	9	11	8	9
		LA Valley	1	1	-	1
		Mt. San Antonio	13	10	10	11

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
		LA Subtotal	46	86	68	67
		Orange Coast	3	7	4	5
		Saddleback	10	18	19	16
		OC Subtotal	13	25	23	20
Supply Subtotal/Average			59	111	91	87
0934.30	Telecommunications Technology	LA Pierce	12	8	4	8
		LA Trade	35	8	10	18
		Long Beach	8	6	1	5
		Mt. San Antonio	2	6	3	4
Supply Subtotal/Average			57	28	18	34
Supply Total/Average			116	139	109	121

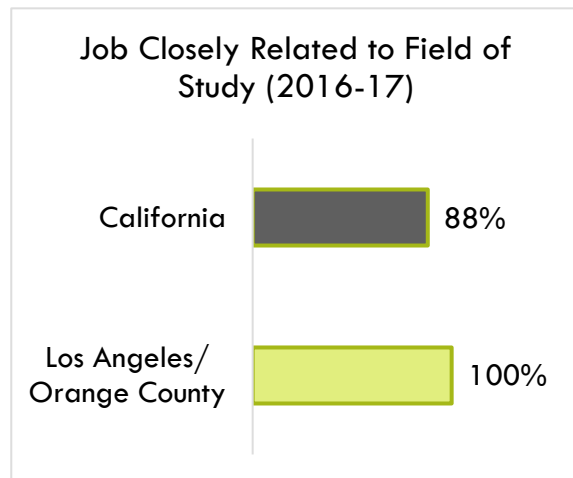
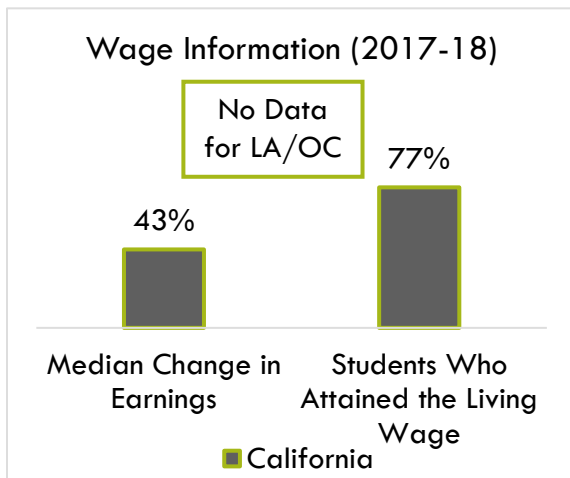
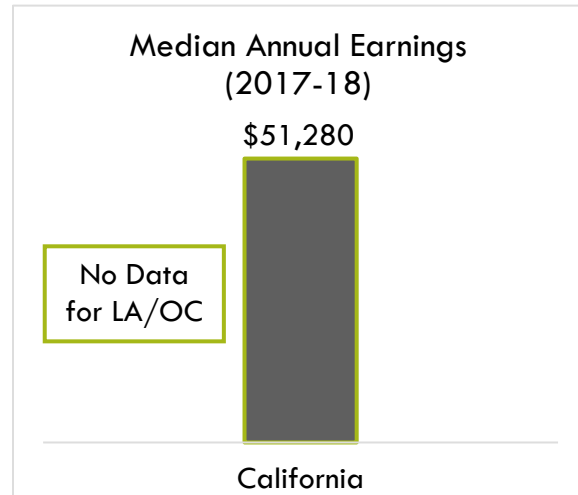
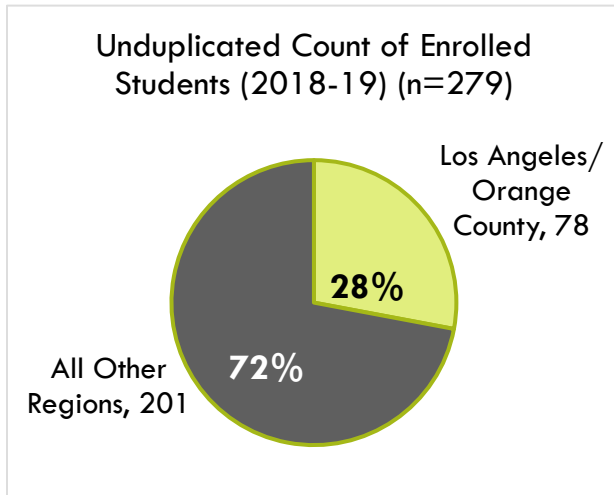
The following section displays strong workforce program outcome metrics for the computer electronics programs in the LA/OC region and California.

Exhibits 3-6: Workforce Program Metrics – Computer Electronics (0934.10)



The following section displays strong workforce program outcome metrics for the telecommunications technology programs in the LA/OC region and California.

Exhibits 7-10: Workforce Program Metrics – Telecommunications Technology (0934.30)



Non-Community College Supply—There are other institutions in the region that provide training programs related to computer networking technology. Exhibit 11 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Program (CIP) Code: Computer Installation and Repair Technology/Technician (47.0104). 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 colleges in the region conferred an average of 203 awards annually in related training programs.

Exhibit 11: Regional non-community college awards, 2014-2017

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
47.0104	Computer Installation and Repair Technology/Technician	ABCO Technology	19	20	32	24
		Eagle Rock College	1	4	1	2
		East San Gabriel Valley Regional Occupational Program	24	15	-	13
		Hacienda La Puente Adult Education	25	28	26	26
		UEI College-Gardena	33	21	17	24
		United Education Institute-Anaheim	42	39	24	35
		United Education Institute-Encino	46	45	37	43
		United Education Institute-West Covina	30	35	45	37
Total/Average			220	207	182	203

Appendix A: Occupational demand and wage data by county

Exhibit 12. Los Angeles County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Computer User Support Specialists (15-1232)	19,080	20,408	1,328	7%	1,875	\$21.25	\$26.76	\$34.00
Computer Network Support Specialists (15-1231)	4,759	4,996	237	5%	446	\$25.22	\$32.08	\$40.74
Computer, Automated Teller, and Office Machine Repairers (49-2011)	3,215	2,966	(249)	(8%)	333	\$14.31	\$18.59	\$24.04
Total	27,054	28,370	1,316	5%	2,653			

Exhibit 13. Orange County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Computer User Support Specialists (15-1232)	8,160	8,650	490	6%	783	\$21.34	\$26.86	\$34.14
Computer Network Support Specialists (15-1231)	1,916	1,991	75	4%	175	\$25.29	\$32.13	\$40.85
Computer, Automated Teller, and Office Machine Repairers (49-2011)	1,717	1,651	(66)	(4%)	182	\$16.51	\$20.97	\$26.78
Total	11,792	12,292	500	4%	1,140			

Exhibit 14. Los Angeles and Orange counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education	On-The-Job Training & Work Experience
Computer User Support Specialists (15-1232)	27,240	29,058	1,818	7%	2,658	Some college, no degree	None & None
Computer Network Support Specialists (15-1231)	6,675	6,987	312	5%	620	Associate degree	None & None
Computer, Automated Teller, and Office Machine Repairers (49-2011)	4,932	4,617	(315)	(6%)	515	Some college, no degree	1 month & None
Total	38,847	40,662	1,815	5%	3,793		

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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