

**Program Endorsement Brief: 0708.20 – Computer Support  
Computer Support Specialist (Associate of Science Degree & Certificate)**  
Los Angeles/Orange County Center of Excellence, November 2021

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**Summary Analysis**

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

- *Computer network support specialists (15-1231);*
- *Computer user support specialists (15-1232);*
- *Computer network architects (15-1241); and*
- *Network and computer systems administrators (15-1244)*

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.<sup>1</sup> Although two of the four occupations in this report typically require a bachelor's degree, they are considered middle-skill because more than one-third of workers in the field have completed some college or an associate degree. 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 occupations of interest in the region. In addition to all four occupations having entry-level wages that exceed the self-sufficiency standard wage in both Los Angeles and Orange counties, the majority of annual openings (70%) typically require an associate degree or some college. **Therefore, due to all of the criteria being met, the COE endorses this proposed program.** Detailed reasons include:

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<sup>1</sup> 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.

**Demand:**

- **Supply Gap Criteria** – Over the next five years, there is projected to be **3,248 jobs available annually** in the region due to new job growth and replacements, **which is more than the 1,932 awards conferred annually** by educational institutions in the region.
- **Living Wage Criteria** – In Los Angeles County, **all four occupations have entry-level wages above the self-sufficiency standard hourly wage** (\$18.10/hour).<sup>2</sup>
- **Educational Criteria** – Within the Los Angeles/Orange County region, **70% of the annual job openings for the occupations of interest typically require an associate degree or some college, no degree.**
  - National-level educational attainment data indicates **between 37% and 40% of workers in the field have completed some college or an associate degree.**

**Supply:**

- Between 2017 and 2020, **26 community colleges** in the LA/OC region issued awards in programs that have historically trained for the occupations of interest, conferring an average of **826 awards**.
- Between 2016 and 2019, non-community college institutions in the region conferred an average of **1,106 awards in relevant programs**.

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<sup>2</sup> Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California on 11/1/2021. For more information, visit: <http://selfsufficiencystandard.org/california>.

## Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for the four occupations of interest. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 3% through 2025. There will be more than 3,200 job openings per year through 2025 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 full impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the full impacts of COVID-19 into account.*

**Exhibit 1: Occupational demand in Los Angeles and Orange Counties<sup>3</sup>**

Geography	2020 Jobs	2025 Jobs	2020-2025 Change	2020-2025 % Change	Annual Openings
Los Angeles	32,088	32,862	774	2%	2,220
Orange	14,033	14,613	580	4%	1,028
<b>Total</b>	<b>46,121</b>	<b>47,475</b>	<b>1,354</b>	<b>3%</b>	<b>3,248</b>

## Wages

The labor market endorsement in this report considers the hourly wages for the four occupations in Los Angeles County, as they relate to the county's self-sufficiency standard 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 four occupations have entry-level wages **above** the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$21.91 and \$41.80. Experienced workers can expect to earn wages between \$36.47 and \$72.55, which are above the self-sufficiency standard wage.

**Orange County** — All four occupations have entry-level wages **above** the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$21.39 and \$40.98. Experienced workers can expect to earn wages between \$35.62 and \$71.04, which are above the self-sufficiency standard wage.

## Job Postings

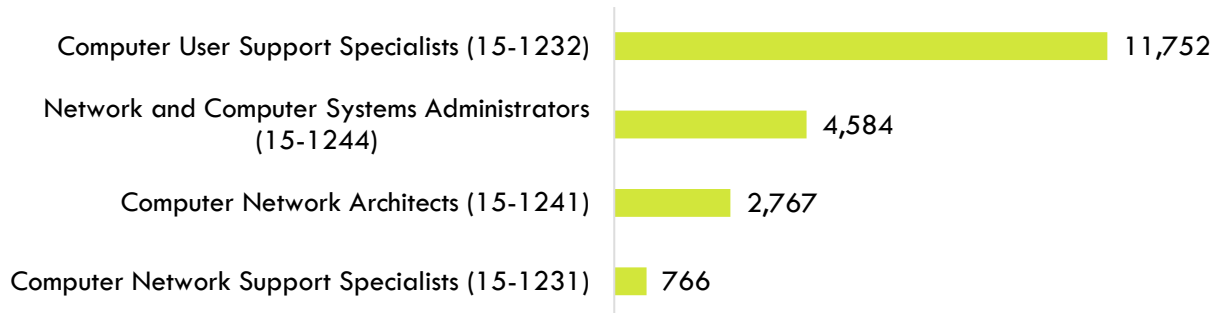
Over the past 12 months, there have been 19,869 online job postings related to the four occupations. Exhibit 2 displays the number of job postings by occupation. The majority of job postings (59%) were for *computer user support specialists*, followed by *network and computer systems administrators* (23%) and *computer network architects* (14%). The highest number of job postings were for systems administrator, help desk analyst, network engineer, IT support specialist,

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

and desktop support technician. The top skills were technical support, customer service, help desk support, repair, and systems administration. The top employers, by number of job postings, in the region were Anthem Blue Cross, Best Buy, Northrop Grumman, Raytheon, and Boeing.

*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 full 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.*

### Exhibit 2: Job postings by occupation (last 12 months)



### Educational Attainment

The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations studied in this report:

- **Bachelor's degree:** *Computer network architects (15-1241); and network and computer systems administrators (15-1244)*
- **Associate degree:** *Computer network support specialists (15-1231)*
- **Some college, no degree:** *Computer user support specialists (15-1232)*

In the LA/OC region, the majority of annual job openings (70%) typically require an associate degree or some college, no degree. Furthermore, national-level educational attainment data indicates that between 37% and 40% of workers in the field have completed some college or an associate degree. Of the 55% of job postings listing a minimum education requirement in Los Angeles/Orange County, 29% (3,184) requested high school or vocational training, 10% (1,065) requested an associate degree, and 61% (6,741) requested a bachelor's degree.

## Educational Supply

**Community College Supply** — Exhibit 3 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, Coastline, and West LA. Over the past 12 months, there were 30 other related program recommendation requests from regional community colleges.

**Exhibit 3: Regional community college awards (certificates and degrees), 2017-2020**

TOP Code	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
		<b>LA Subtotal</b>	<b>130</b>	<b>175</b>	<b>172</b>	<b>159</b>
<b>Supply Subtotal/Average</b>			<b>130</b>	<b>175</b>	<b>172</b>	<b>159</b>
0702.00	Computer Information Systems	Citrus	7	5	8	7
		Compton	-	1	-	0
		East LA	16	19	15	17
		El Camino	18	14	21	18
		Glendale	-	-	5	2
		LA City	4	1	1	2
		LA Mission	9	5	1	5
		LA Trade-Tech	14	8	20	14
		Mt San Antonio	-	-	79	26
		Pasadena	1	-	-	0
		Rio Hondo	19	21	10	17
		West LA	6	8	10	8
		<b>LA Subtotal</b>	<b>94</b>	<b>82</b>	<b>170</b>	<b>115</b>
		Cypress	8	5	4	6
		Fullerton	20	15	11	15
		Irvine Valley	-	-	2	1
		Orange Coast	3	4	2	3
		Santa Ana	6	4	2	4

TOP Code	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
		Santiago Canyon	2	3	4	3
		<b>OC Subtotal</b>	<b>39</b>	<b>31</b>	<b>25</b>	<b>32</b>
<b>Supply Subtotal/Average</b>			<b>133</b>	<b>113</b>	<b>195</b>	<b>147</b>
0707.30	Computer Systems Analysis	Cerritos	4	2	3	3
		East LA	-	-	1	0
		LA Mission	-	-	1	0
		<b>LA Subtotal</b>	<b>4</b>	<b>2</b>	<b>5</b>	<b>4</b>
		Cypress	5	2	-	2
		<b>OC Subtotal</b>	<b>5</b>	<b>2</b>	<b>-</b>	<b>2</b>
<b>Supply Subtotal/Average</b>			<b>9</b>	<b>4</b>	<b>5</b>	<b>6</b>
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
		<b>LA Subtotal</b>	<b>30</b>	<b>40</b>	<b>82</b>	<b>51</b>
		Coastline	65	49	46	53
		Cypress	1	2	3	2
		Orange Coast	-	-	7	2
<b>OC Subtotal</b>	<b>66</b>	<b>51</b>	<b>56</b>	<b>58</b>		
<b>Supply Subtotal/Average</b>			<b>96</b>	<b>91</b>	<b>138</b>	<b>108</b>
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

TOP Code	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
		West LA	43	77	48	56
		<b>LA Subtotal</b>	<b>146</b>	<b>221</b>	<b>145</b>	<b>171</b>
		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
		<b>OC Subtotal</b>	<b>85</b>	<b>143</b>	<b>208</b>	<b>145</b>
<b>Supply Subtotal/Average</b>			<b>231</b>	<b>364</b>	<b>353</b>	<b>316</b>
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
		<b>LA Subtotal</b>	<b>14</b>	<b>34</b>	<b>60</b>	<b>36</b>
		Cypress	1	3	5	3
		Santa Ana	10	9	-	6
		<b>OC Subtotal</b>	<b>11</b>	<b>12</b>	<b>5</b>	<b>9</b>
<b>Supply Subtotal/Average</b>			<b>25</b>	<b>46</b>	<b>65</b>	<b>45</b>
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
		<b>LA Subtotal</b>	<b>42</b>	<b>50</b>	<b>40</b>	<b>44</b>
		Saddleback	-	-	2	1
		<b>OC Subtotal</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>1</b>
<b>Supply Subtotal/Average</b>			<b>42</b>	<b>50</b>	<b>42</b>	<b>45</b>
<b>Supply Total/Average</b>			<b>666</b>	<b>843</b>	<b>970</b>	<b>826</b>

**Non-Community College Supply** — For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that may provide training programs for the occupations of interest. Exhibit 4 shows the annual and three-year average number of awards conferred by these institutions in programs that are crosswalked to the TOP in Exhibit 3. 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 1,106 awards.

**Exhibit 4: Regional non-community college awards, 2016-2019**

CIP Code	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
		UC-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
11.0103	Information Technology	Abraham Lincoln University	-	1	1	1
		Brand College	28	37	50	38
		California Intercontinental University	1	-	-	0
		CSU-Dominguez Hills	-	1	5	2
		CSU-Los Angeles	117	162	158	146
		CSU-Northridge	43	54	54	50
		Platt College-Anaheim	-	1	11	4
		Platt College-Los Angeles	-	-	6	2
		Stanbridge University	25	-	-	8
		Trident University International	74	93	75	81
		University of La Verne	-	-	3	1
		University of Phoenix-CA	16	60	57	44



CIP Code	Program	Institution	2016-17 Awards	2017-18 Awards	2018-19 Awards	3-Year Average
11.0199	Computer and Information Sciences, Other	Antioch University-LA	20	47	4	24
		Brand College	2	-	2	1
		CSU-Dominguez Hills	66	59	55	60
		CSU-Northridge	77	77	87	80
11.0501	Computer Systems Analysis/Analyst	Brand College	4	2	-	2
		DeVry University-CA	94	55	49	66
		University of Phoenix-CA	4	4	-	3
11.0901	Computer Systems Networking and Telecommunications	Brand College	2	-	2	1
		DeVry University-CA	135	106	86	109
		Mt Sierra College	5	4	-	3
		University of Phoenix-CA	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-CA	1	12	13	9
11.1002	System, Networking, and LAN/WAN Management/Manager	ABCO Technology	10	7	9	9
11.1003	Computer and Information Systems Security/Information Assurance	Azusa Pacific University	3	-	-	1
		Learnet Academy	48	17	-	22
		Mt Sierra College	8	13	-	7
		University of Phoenix-CA	71	42	32	48
11.1004	Web/Multimedia Management and Webmaster	ABCO Technology	12	17	24	18
		Pepperdine University	-	2	-	1
		University of Phoenix-CA	4	-	1	2
11.1005	Information Technology Project Management	California Intercontinental University	2	-	1	1
11.1006	Computer Support Specialist	Southern California Institute of Technology	16	26	25	22
		University of Phoenix-CA	1	2	-	1
15.1202	Computer Technology/Computer Systems Technology	Learnet Academy	11	1	-	4
<b>Supply Total/Average</b>			<b>1,083</b>	<b>1,167</b>	<b>1,068</b>	<b>1,106</b>

**Appendix A: Occupational demand and wage data by county**

**Exhibit 5. Los Angeles County**

<b>Occupation (SOC)</b>	<b>2020 Jobs</b>	<b>2025 Jobs</b>	<b>5-Yr Change</b>	<b>5-Yr % Change</b>	<b>Annual Openings</b>	<b>Entry-Level Hourly Earnings (25<sup>th</sup> Percentile)</b>	<b>Median Hourly Earnings</b>	<b>Experienced Hourly Earnings (75<sup>th</sup> Percentile)</b>
Computer Network Support Specialists (15-1231)	4,017	4,146	129	3%	299	\$26.78	\$32.32	\$40.09
Computer User Support Specialists (15-1232)	16,668	17,226	558	3%	1,245	\$21.91	\$28.02	\$36.47
Computer Network Architects (15-1241)	3,491	3,507	16	0%	201	\$41.80	\$58.05	\$72.55
Network and Computer Systems Administrators (15-1244)	7,912	7,983	71	1%	475	\$35.43	\$45.81	\$57.01
<b>Total</b>	<b>32,088</b>	<b>32,862</b>	<b>774</b>	<b>2%</b>	<b>2,220</b>			

**Exhibit 6. Orange County**

<b>Occupation (SOC)</b>	<b>2020 Jobs</b>	<b>2025 Jobs</b>	<b>5-Yr Change</b>	<b>5-Yr % Change</b>	<b>Annual Openings</b>	<b>Entry-Level Hourly Earnings (25<sup>th</sup> Percentile)</b>	<b>Median Hourly Earnings</b>	<b>Experienced Hourly Earnings (75<sup>th</sup> Percentile)</b>
Computer Network Support Specialists (15-1231)	1,685	1,747	62	4%	127	\$26.58	\$32.07	\$39.83
Computer User Support Specialists (15-1232)	7,473	7,848	375	5%	588	\$21.39	\$27.35	\$35.62
Computer Network Architects (15-1241)	1,658	1,704	46	3%	104	\$40.98	\$56.88	\$71.04
Network and Computer Systems Administrators (15-1244)	3,218	3,313	95	3%	209	\$34.80	\$45.01	\$56.06
<b>Total</b>	<b>14,033</b>	<b>14,613</b>	<b>580</b>	<b>4%</b>	<b>1,028</b>			

### Exhibit 7. Los Angeles and Orange Counties

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Computer Network Support Specialists (15-1231)	5,701	5,893	192	3%	426	Associate degree
Computer User Support Specialists (15-1232)	24,141	25,074	933	4%	1,833	Some college, no degree
Computer Network Architects (15-1241)	5,149	5,211	62	1%	305	Bachelor's degree
Network and Computer Systems Administrators (15-1244)	11,130	11,296	166	1%	684	Bachelor's degree
<b>Total</b>	<b>46,121</b>	<b>47,475</b>	<b>1,354</b>	<b>3%</b>	<b>3,248</b>	

#### 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:

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