



Labor Market Analysis: 0708.10 – Computer Networking Cybersecurity Analyst – Certificate requiring 16 to fewer than 30 semester units Los Angeles Center of Excellence, July 2025

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 type="checkbox"/>	No <input checked="" type="checkbox"/> (See below)	
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"/>	

SUMMARY

This report analyzes whether local labor market demand is being met by community college programs aligned with the identified middle-skill occupations¹ or whether a shortage of workers exists. Labor market demand is measured by annual job openings while education supply is measured by the number of awards (degrees and certificates) conferred on average each year.

Based on the available data, there does not appear to be a supply gap for the four identified middle-skill occupations in the region. However, the talent oversupply is with the COE's acceptable margin (the number of awards issued is 25% over or under the number of annual openings) and is therefore considered "supply met" rather than a "supply gap." While this program does not meet the traditional supply/demand endorsement criteria, there may be demand for these workers from local employers that is not reflected in traditional labor market data. For this reason, real-time labor market data is included in this report as well – to provide a more nuanced view of the regional job market for these middle-skill cybersecurity occupations. Furthermore, entry-level wages exceed the self-sufficiency standard wage in both Los Angeles and Orange counties, and more than one-third of current workers in the field have completed an associate degree or less educational attainment.

Recommendation: Due to two program endorsement criteria being met, the Los Angeles Center of Excellence for Labor Market Research (LA COE) endorses this proposed program.

¹ Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree. 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.

Key Findings

Supply Gap

- 1,432 annual job openings are projected in the region through 2028. This number is less than the three-year average of 1,660 awards conferred by educational institutions in the region.
 - Although there are more awards conferred than job openings, the data suggests that the **demand has been met for these occupations within the LA/OC region** since the three-year average number of awards (supply) is within the COE's 25% margin of annual job openings (demand).
 - Over the past 12 months, there were **5,784 online job postings related to these cybersecurity occupations**. The highest number of job postings were for network engineers, systems administrators, network administrators, cybersecurity analysts, windows administrators, and information security analysts.

Living Wage

- All four occupations have entry-level wages **above** Los Angeles County's self-sufficiency standard hourly wage (\$24.03/hour).²

Educational Attainment

- 80% of the annual job openings typically require a bachelor's degree for these occupations related to cybersecurity in the LA/OC region.
- 31%-51% of workers in the field have completed an associate degree or less education, according to national educational attainment data.

Community college supply

- 27 community colleges issued awards related to cybersecurity in the greater LA/OC region.
- 1,578 awards (degrees and certificates) were conferred on average each year between 2022 and 2024.

Other postsecondary supply

- 5 educational institutions in the LA/OC region have conferred awards in programs related to cybersecurity over the past three years.
- 82 awards were conferred on average each year by other postsecondary institutions throughout the greater LA/OC region between 2021 and 2023.

TARGET OCCUPATIONS

LA COE prepared this report to provide regional labor market and postsecondary supply data related to four middle-skill occupations. Although some of the occupations in this report typically require a bachelor's degree, they are considered middle-skill because approximately one-third of workers in the field have completed an associate degree or less educational attainment. [For full occupation descriptions, please see Appendix.](#)

- **Information Security Analysts (15-1212)**³

² Center for Women's Welfare, University of Washington. (2024). *The self-sufficiency standard for California 2024*. <http://selfsufficiencystandard.org/California>.

³ [Information Security Analysts \(bls.gov\)](https://www.bls.gov)

- **Computer Network Support Specialists (15-1231)**⁴
- **Computer Network Architects (15-1241)**⁵
- **Network and Computer Systems Administrators (15-1244)**⁶

OCCUPATIONAL DEMAND

Exhibit 1 shows the five-year occupational demand projections for occupations related to cybersecurity. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to decrease by 2% through 2028. There will be more than 1,400 job openings per year through 2028 due to job growth and replacements. The majority of jobs in 2023 for these cybersecurity-related occupations (70%) were located in Los Angeles County.

Exhibit 1: Current employment and occupational demand, Los Angeles and Orange counties⁷

Geography	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	Annual Openings
Los Angeles	17,108	16,648	(460)	(3%)	995
Orange	7,197	7,171	(26)	(0%)	437
Total	24,305	23,819	(487)	(2%)	1,432

Detailed Occupation Data

Exhibit 2 displays the current employment and projected occupational demand for each of the target occupations in Los Angeles County. Positive scores for automation resilience⁸ reflect a lower-than-average threat of the occupation(s) being replaced by automation, while negative scores reflect a greater-than-average risk of automation. The average percentage of workers aged 55+ across all occupations in the Los Angeles/Orange County region is 26%; occupations with a larger share of workers aged 55 and older typically have greater replacement needs to offset the amount of impending retirements. On average, 81% of workers across all occupations in California are employed full-time.

Exhibit 2: Detailed employment and occupational demand, Los Angeles County⁹

Occupation	2023 Jobs	2028 Jobs	5-Yr % Change	Annual Openings	Automation Resilience	% Aged 55 and older	% Full Time Workers
Information Security Analysts	3,267	3,539	8%	236	13.6	18%	100%
Computer Network Support Specialists	3,483	3,067	(12%)	201	13.1	17%	96%

⁴ [Computer Support Specialists \(bls.gov\)](https://www.bls.gov)

⁵ [Computer Network Architects \(bls.gov\)](https://www.bls.gov)

⁶ [Network and Computer Systems Administrators \(bls.gov\)](https://www.bls.gov)

⁷ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

⁸ Automation risk is calculated based on the percentage of time spent on high-risk compared to low-risk work, the number of high-risk jobs in compatible occupations, and the overall industry automation risk.

⁹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Occupation	2023 Jobs	2028 Jobs	5-Yr % Change	Annual Openings	Automation Resilience	% Aged 55 and older	% Full Time Workers
Computer Network Architects	3,298	3,432	4%	205	12.9	17%	100%
Network and Computer Systems Administrators	7,061	6,611	(6%)	353	12.8	16%	100%
Total	17,108	16,648	(3%)	995	-	-	-

WAGES

The labor market endorsement in this report considers the entry-level hourly wages for these occupations related to cybersecurity 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 greater Los Angeles/Orange County region.

Los Angeles County

All four occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$24.03 in Los Angeles County). Typical entry-level hourly wages are in a range between \$27.30 and \$52.83. (Exhibit 3).

All four occupations have entry-level wages above the self-sufficiency standard wage:

- *Computer network architects*, \$52.83
- *Information security analysts*, \$46.76
- *Network and computer systems administrators*, \$40.92
- *Computer network support specialists*, \$27.30

Experienced workers can expect to earn wages between \$47.50 and \$80.01.

Exhibit 3: Earnings for occupations in Los Angeles County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Information Security Analysts	\$46.76	\$63.27	\$79.30	\$131,600
Computer Network Support Specialists	\$27.30	\$35.57	\$47.50	\$74,000
Computer Network Architects	\$52.83	\$65.75	\$80.01	\$136,800
Network and Computer Systems Administrators	\$40.92	\$50.59	\$62.59	\$105,200

*Rounded to the nearest \$100

Orange County

All four occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$27.13 in Orange County). Typical entry-level hourly wages are in a range between \$27.33 and \$53.62 (Exhibit 4).

Four occupations have entry-level wages above the self-sufficiency standard wage:

- *Computer network architects*, \$53.62
- *Information security analysts*, \$45.83
- *Network and computer systems administrators*, \$40.48
- *Computer network support specialists*, \$27.33

Experienced workers can expect to earn wages between \$47.62 and \$81.18.

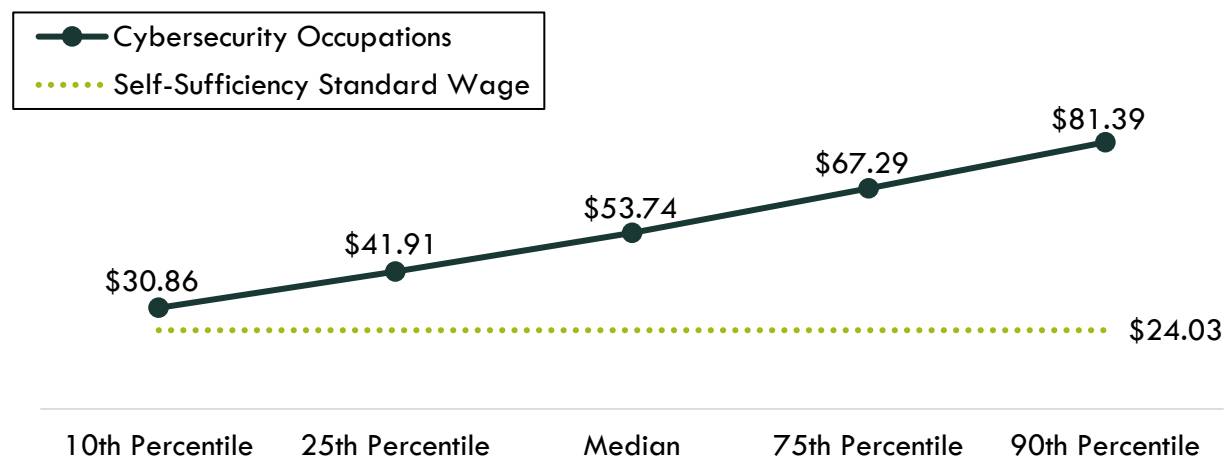
Exhibit 4: Earnings for occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Information Security Analysts	\$45.83	\$62.07	\$77.83	\$129,100
Computer Network Support Specialists	\$27.33	\$35.62	\$47.62	\$74,100
Computer Network Architects	\$53.62	\$66.73	\$81.18	\$138,800
Network and Computer Systems Administrators	\$40.48	\$50.06	\$61.93	\$104,100

*Rounded to the nearest \$100

Across the greater Los Angeles and Orange County region, the average entry-level hourly earnings for the occupations in this report are \$41.91; this is above the living wage for one single adult in Los Angeles County (\$24.03). Exhibit 5 shows the average hourly wage for the occupations in this report, for entry-level to experienced workers.

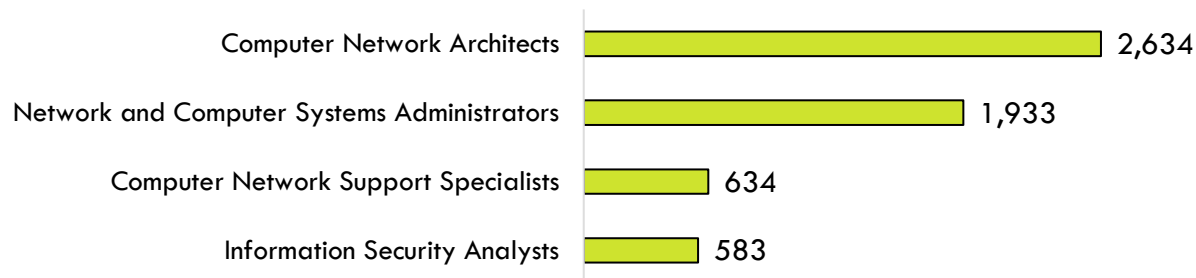
Exhibit 5: Average hourly earnings for occupations, Los Angeles and Orange counties



JOB POSTINGS

There were 5,784 online job postings related to cybersecurity occupations listed in the past 12 months in Los Angeles and Orange counties. Exhibit 6 displays the number of job postings by occupation. The majority of job postings (46%) were for *computer network architects*, followed by *network and computer systems administrators* (33%) and *computer network support specialists* (11%).

Exhibit 6: Job postings by occupation (last 12 months), Los Angeles and Orange counties



Job postings were analyzed for the most common job titles, skills, and employers associated with the target occupations in this report (Exhibit 7).

Exhibit 7: Most commonly requested job titles, skills and employers in job postings, Los Angeles and Orange counties

Top Job Titles	Top Skills	Top Employers
<ul style="list-style-type: none"> • Network engineers • Systems administrators • Network administrators • Cybersecurity analysts • Windows administrators • Information security analysts 	<ul style="list-style-type: none"> • Computer science • Firewall • Network routing • Operating systems • Automation • Linux 	<ul style="list-style-type: none"> • Northrop Grumman • The Jude Group* • Robert Half* • Insight Global* • Raytheon Technologies • Boeing

*Staffing Company

In the greater Los Angeles/Orange County region, 63% of the cybersecurity-related job postings listed a minimum educational requirement. Exhibit 8 details the number and percentage of job postings by educational level.

Exhibit 8: Education levels requested in job postings for occupations related to cybersecurity, Los Angeles and Orange counties

Education Level	Job Postings	% of Job Postings
Bachelor's degree	2,724	75%
Associate degree	241	7%
High school diploma or vocational training	659	18%

EDUCATIONAL ATTAINMENT

In the greater Los Angeles/Orange County region, the majority of annual job openings (80%) typically require a bachelor's degree (Exhibit 9). However, the national-level data indicates between 31% and 51% of workers in the field have completed an associate degree or less education as their highest level of educational attainment. The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations in this report:

Exhibit 9: Entry-level education preferred by employers nationally, Bureau of Labor Statistics

Occupation	Education Level
Information Security Analysts	Bachelor's degree
Computer Network Architects	Bachelor's degree
Network and Computer Systems Administrators	Bachelor's degree
Computer Network Support Specialists	Associate degree

EDUCATIONAL SUPPLY

Community College Supply

Exhibit 10 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 Orange Coast, Mt. San Antonio, and Coastline.

Exhibit 10: Regional community college awards (certificates and degrees), 2022-2024

TOP Code	Program	College	2021-22 Awards	2022-23 Awards	2023-24 Awards	3-Year Average
0702.00	Computer Information Systems	Citrus	6	2	5	4
		Compton	12	4	4	7
		East LA	11	23	42	25
		El Camino	28	19	27	25
		Glendale	8	11	5	8
		LA City	3	4	20	9
		LA Harbor	1	2	3	2
		LA Mission	1	-	-	0
		LA Southwest	21	20	10	17
		LA Trade-Tech	17	35	18	23
		Long Beach	-	6	26	11
		Mt San Antonio	68	41	41	50
		Rio Hondo	15	14	14	14
		Santa Monica	-	2	6	3
West LA	14	8	7	10		

TOP Code	Program	College	2021-22 Awards	2022-23 Awards	2023-24 Awards	3-Year Average
		LA Subtotal	205	191	228	208
		Coastline	2	7	11	7
		Fullerton	49	48	51	49
		Irvine	-	1	-	0
		Orange Coast	1	-	-	0
		Saddleback	-	1	1	1
		Santa Ana	18	8	23	16
		Santiago Canyon	1	5	2	3
		OC Subtotal	71	70	88	76
		Supply Subtotal/Average	276	261	316	284
0707.10	Computer Programming	Cerritos	7	2	2	4
		Citrus	9	7	9	8
		East LA	-	1	2	1
		Glendale	-	-	1	0
		LA City	10	19	30	20
		LA Harbor	4	6	1	4
		LA Mission	7	6	15	9
		LA Pierce	5	7	7	6
		LA Southwest	2	3	3	3
		LA Valley	8	15	15	13
		Long Beach	7	4	4	5
		Mt San Antonio	125	65	68	86
		Pasadena	23	37	46	35
		Santa Monica	71	55	77	68
		West LA	-	-	1	0
		LA Subtotal	278	227	281	262
		Coastline	1	2	-	1
		Cypress	5	5	6	5
		Fullerton	28	32	1	20
		Orange Coast	160	250	202	204
		Santa Ana	-	-	5	2
		Santiago Canyon	2	3	4	3
		OC Subtotal	196	292	218	235
		Supply Subtotal/Average	474	519	499	497
0708.00		Cerritos	9	14	14	12

TOP Code	Program	College	2021-22 Awards	2022-23 Awards	2023-24 Awards	3-Year Average
		East LA	3	11	3	6
		El Camino	5	8	13	9
		Glendale	11	3	4	6
		LA City	12	19	50	27
		LA Harbor	2	1	-	1
		LA Mission	32	20	58	37
		LA Valley	3	2	3	3
		Long Beach	2	24	37	21
		Mt San Antonio	36	17	35	29
		Pasadena	8	17	3	9
		Rio Hondo	19	30	31	27
		West LA	7	4	7	6
		LA Subtotal	149	170	258	192
		Coastline	91	81	137	103
		Cypress	1	-	1	1
		Fullerton	-	-	1	0
		Orange Coast	7	2	2	4
		Saddleback	13	14	14	14
		Santa Ana	14	20	18	17
		Santiago Canyon	-	1	1	1
		OC Subtotal	126	118	174	139
		Supply Subtotal/Average	275	288	432	332
0708.10		Cerritos	6	10	13	10
		Glendale	2	2	-	1
		LA City	8	6	11	8
		LA Pierce	19	14	24	19
		Long Beach	52	70	39	54
		Mt San Antonio	25	13	21	20
		Rio Hondo	5	7	10	7
		Santa Monica	-	1	-	0
		West LA	24	24	68	39
		LA Subtotal	141	147	186	158
		Coastline	49	17	36	34
		Cypress	71	116	151	113
		Irvine	18	27	34	26
	Computer Infrastructure and Support					
	Computer Networking					

TOP Code	Program	College	2021-22 Awards	2022-23 Awards	2023-24 Awards	3-Year Average
		Saddleback	15	17	15	16
		Santa Ana	45	47	88	60
		OC Subtotal	198	224	324	249
Supply Subtotal/Average			339	371	510	407
0709.00	World Wide Web Administration	Cerritos	3	3	7	4
		Glendale	7	2	6	5
		LA Pierce	-	2	1	1
		Long Beach	44	39	15	33
		Mt San Antonio	-	4	8	4
		Santa Monica	-	3	3	2
		West LA	7	8	5	7
		LA Subtotal	61	61	45	56
		Fullerton	-	-	1	0
		Saddleback	3	3	-	2
		OC Subtotal	3	3	1	2
Supply Subtotal/Average			64	64	46	58
Supply Total/Average			1,428	1,503	1,803	1,578

Exhibit 11 displays the community college awards broken down by award type. In this case, the majority of awards issued by community colleges are certificates (61%).

Exhibit 11: Community college awards by award type, 2022-2024

Award Type	# of Awards	% of Awards
A.A./A.S. degrees	596	38%
Certificates	958	61%
Noncredit awards	24	2%
Total	1,578	100%

Other Postsecondary Supply

For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for cybersecurity occupations. Exhibit 12 shows the number of awards conferred by these institutions in relevant programs. Due to different data collection periods, the most recent data is from 2021 to 2023. Between 2021 and 2023, other postsecondary college institutions in the region conferred an average of 82 bachelor's and sub-baccalaureate awards. Sub-baccalaureate awards include associate degrees, postsecondary awards, and other academic awards that typically take fewer than four years to complete.

Exhibit 12: Other regional postsecondary awards, 2021-2023

CIP Code	Program	Postsecondary Institution	2020-21 Awards	2021-22 Awards	2022-23 Awards	3-Year Average
11.0901	Computer Systems Networking and Telecommunications	Brand College	-	2	-	1
11.1001	Network and System Administration/Administrator	ABCO Technology	40	104	46	63
		Brand College	16	9	6	10
11.1003	Computer and Information Systems Security/Auditing/Information Assurance	InterCoast Colleges-West Covina	-	2	6	3
		Learnet Academy	4	3	1	3
		Platt College-LA	-	-	7	2
Supply Total/Average			60	120	66	82

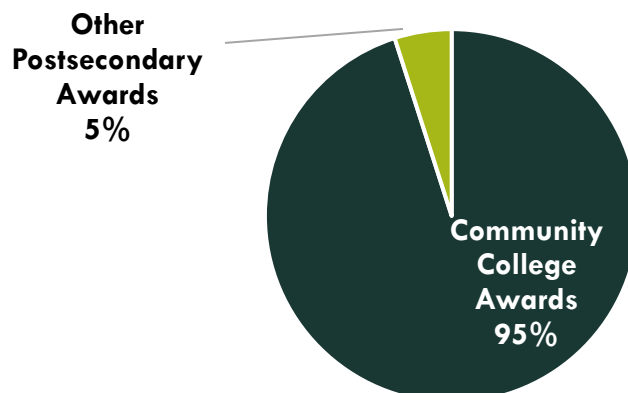
Exhibit 13 shows the breakdown of other postsecondary awards by award type. The majority of awards issued by other postsecondary schools are sub-baccalaureate (98%).

Exhibit 13: Other postsecondary awards by award type, 2021-2023

Award Type	# of Awards	% of Awards
Bachelor’s degrees	2	2%
Sub-baccalaureate awards	80	98%
Total	80	100%

Exhibit 14 shows the proportion of community college awards conferred in the greater Los Angeles/Orange County region compared to the number of other postsecondary awards for the programs in this report. The majority of awards conferred in these programs are awarded by community colleges in the greater Los Angeles/Orange County region.

Exhibit 14: Percentage of community college awards compared to other postsecondary institution awards in the Los Angeles/Orange County region



APPENDIX: OCCUPATION DESCRIPTIONS

LA COE prepared this report to provide regional labor market supply and demand data related to these target occupations:

- **Information Security Analysts (15-1212)** Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. Assess system vulnerabilities for security risks and propose and implement risk mitigation strategies. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.¹⁰
- **Computer Network Support Specialists (15-1231)** Analyze, test, troubleshoot, and evaluate existing network systems, such as local area networks (LAN), wide area networks (WAN), cloud networks, servers, and other data communications networks. Perform network maintenance to ensure networks operate correctly with minimal interruption.¹¹
- **Computer Network Architects (15-1241)** Design and implement computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. Perform network modeling, analysis, and planning, including analysis of capacity needs for network infrastructures. May also design network and computer security measures. May research and recommend network and data communications hardware and software.¹²
- **Network and Computer Systems Administrators (15-1244)** Install, configure, and maintain an organization's local area network (LAN), wide area network (WAN), data communications network, operating systems, and physical and virtual servers. Perform system monitoring and verify the integrity and availability of hardware, network, and server resources and systems. Review system and application logs and verify completion of scheduled jobs, including system backups. Analyze network and server resource consumption and control user access. Install and upgrade software and maintain software licenses. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software.¹³

¹⁰ [Information Security Analysts \(bls.gov\)](https://www.bls.gov)

¹¹ [Computer Support Specialists \(bls.gov\)](https://www.bls.gov)

¹² [Computer Network Architects \(bls.gov\)](https://www.bls.gov)

¹³ [Network and Computer Systems Administrators \(bls.gov\)](https://www.bls.gov)

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POWERED BY



DATA SOURCES

- O*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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