



Computer Networking and Information Technology (TOP 0708.10)

March 2023

Prepared by the South Central Coast Center of Excellence for Labor
Market Research

Program Recommendation

This report was compiled by the South Central Coast¹ Center of Excellence to provide regional labor market data for the program recommendation – Computer Networking and Information Technology. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study (CCC and non-CCC) that align with this occupation group.

Key Findings

- In the South Central Coast region, **the number of jobs related to Computer Networking and Information Technology are expected to remain steady** for Computer Systems Analysts, Network and Computer Systems Administrators, and Computer Network Support Specialists.
- Computer Networking and Information Technology is anticipated to experience a **low risk of automation** for all three related occupations.
- In 2021 there were 364 regional completions in programs related to the occupations identified as aligned with Computer Networking and Information Technology and 350 openings, indicating **supply is meeting demand**.
- Typical entry-level education includes a **bachelor's degree** for all three related occupations.
- **Minimum Advertised Education** per job posting data – 70% of job postings requested a bachelor's degree and 9% requested an associate's degree.
- Completers of Computer Networking and Information Technology programs from the 2019-2020 academic year, in the South Central Coast region, had a **median annual wage upon completion of \$44,148**.
- 59% of students are **employed within a year** after completing a program.
- 54% of students **attained a living wage** within a year of completion.
- Completers experienced an average of +21% **change in earnings after exiting**.
- 70% of students were **part-time**, 11% **skill builders**, 38% **first-generation**, and 77% **economically disadvantaged**

¹ The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

Occupation Codes and Descriptions

There are three occupations in the standard occupational classification (SOC) system that were identified as related to Computer Networking and Information Technology for this analysis. The occupation titles and descriptions, as well as reported job titles, are included in Exhibit 1.

Exhibit 1 – Occupation, Description, and Sample Job Titles

SOC Code	Title	Description	Sample of Reported Job Titles
15-1211	Computer Systems Analysts	Analyze science, engineering, business, and other data processing problems to develop and implement solutions to complex applications problems, system administration issues, or network concerns. Perform systems management and integration functions, improve existing computer systems, and review computer system capabilities, workflow, and schedule limitations. May analyze or recommend commercially available software.	Applications Analyst, Business Systems Analyst, Computer Analyst, Computer Systems Analyst, Computer Systems Consultant, Information Systems Analyst (ISA), Information Technology Analyst (IT Analyst), System Analyst, Systems Analyst
15-1231	Computer Network Support Specialists	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.	Computer Network Specialist, IT Consultant (Information Technology Consultant), Network Specialist, Network Support Specialist, Network Technical Analyst, Network Technician, Personal Computer Network Analyst, Systems Specialist
15-1244	Network and Computer Systems Administrators	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.	Information Analyst, Information Systems Manager (IS Manager), Information Technology Specialist (IT Specialist), LAN Specialist (Local Area Network Specialist), Local Area Network Administrator (LAN Administrator), Network Administrator, Network Coordinator, Network Manager, Systems Administrator

Source: O*NET Online

Current and Future Employment

In the South Central Coast region, the number of jobs related to Computer Networking and Information Technology are expected to remain steady for Computer Systems Analysts, Network and Computer Systems Administrators, and Computer Network Support Specialists.

Exhibit 2 – Five-Year Projections for Computer Networking and Information Technology in the South Central Coast Region

SOC	Occupation	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change
15-1211	Computer Systems Analysts	2,323	2,382	59	3%
15-1244	Network and Computer Systems Administrators	1,205	1,240	35	3%
15-1231	Computer Network Support Specialists	622	641	19	3%

Source: Economic Modeling Specialists International (EMSI)

Earnings

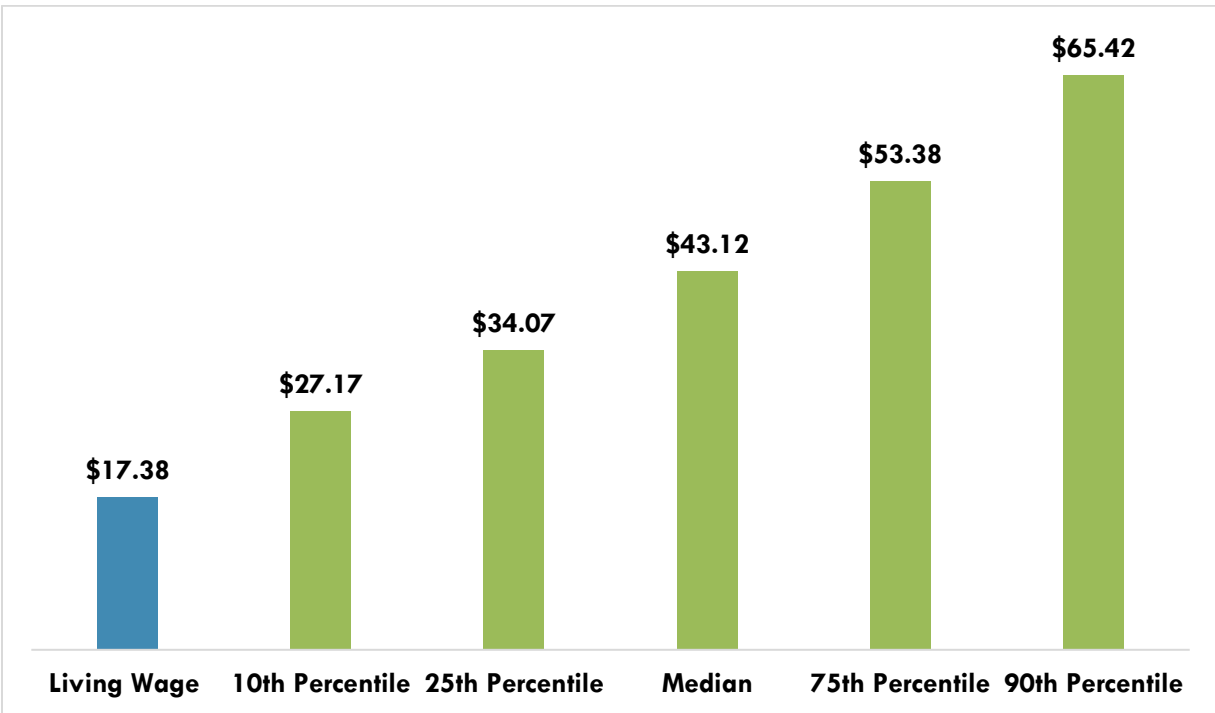
Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings are represented by the 25th percentile of wages, median hourly earnings are represented by the 50th percentile of wages, and experienced hourly earnings are represented by the 75th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for Computer Networking and Information Technology in the South Central Coast Region

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
15-1211	Computer Systems Analysts	\$39.95	\$50.21	\$64.41
15-1244	Network and Computer Systems Administrators	\$35.84	\$46.11	\$54.09
15-1231	Computer Network Support Specialists	\$26.42	\$33.04	\$41.64

Source: Economic Modeling Specialists International (EMSI)

Exhibit 3b – Earnings for Computer Networking and Information Technology in the South Central Coast Region



Source: Family Needs Calculator (Living wage is based on Single Adult households with no children); Economic Modeling Specialists International (EMSI)

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is looking for information technology workers, and what they are looking for in potential candidates. To identify job postings related to Computer Networking and Information Technology the following standard occupational classifications were used:

15-1211	Computer Systems Analysts
15-1244	Network and Computer Systems Administrators
15-1231	Computer Network Support Specialists

Top Occupations

In 2022, there were 1,949 employer postings for the occupations related to Computer Networking and Information Technology.

Exhibit 4 – Top Occupations by Job Postings

SOC Code	Occupation	Job Postings, Full Year 2022
15-1211	Computer Systems Analysts	1,074
15-1244	Network and Computer Systems Administrators	732
15-1231	Computer Network Support Specialists	143

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 4b – Top Occupations and Risk of Automation

SOC Code	Occupation	Risk of Automation
15-1211	Computer Systems Analysts	Low
15-1231	Computer Network Support Specialists	Low
15-1244	Network and Computer Systems Administrators	Low

Source: Labor Insight/Jobs (Burning Glass)

Top Titles

The top job titles for employers posting ads for jobs related to Computer Networking and Information Technology are listed in Exhibit 5. Systems Administrators is mentioned as the job title in 16% of all relevant job postings (168 postings).

Exhibit 5 – Job Titles

Title	Job Postings, Full Year 2022
Systems Administrators	168
Business Systems Analysts	76
Network Administrators	60
Systems Analysts	57
Configuration Analysts	46

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 6 lists the major employers hiring professionals in the Computer Networking and Information Technology field. The top employer posting job ads was Amgen. The top worksite cities for these occupations were Thousand Oaks, Santa Barbara, Lompoc, Oxnard, and Palmdale.

Exhibit 6 – Top Employers (n=941)

Employer	Job Postings, Full Year 2022
Amgen	102
Northrop Grumman	97
Elevance Health	96
L3Harris Technologies	42
CTG	26

Source: Labor Insight/Jobs (Burning Glass)

Skills

The tables in Exhibit 7 list employers' most commonly requested skills in job postings related to Computer Networking and Information Technology. Computer Science is the most sought-after specialized skill for employers, followed by Operating Systems and Information Systems. Communications, Management, and Operations were the most requested baseline skills. Operating Systems, Microsoft Office, and Microsoft Excel were the most commonly requested software and programming skills.

Exhibit 7 – Specialized Skills (n= 7,649)

Skills	Job Postings, Full Year 2022
Computer Science	510
Operating Systems	290
Information Systems	261
Linux	244
Business Process	243
Automation	234
Systems Analysis	231
Agile Methodology	221
Auditing	218
Workflow Management	201
Technical Support	195
SQL (Programming Language)	191
Active Directory	190
Windows Servers	188
System Administration	179

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 7b – Baseline Skills (n= 9,956)

Skills	Job Postings, Full Year 2022
Communications	782
Management	733
Operations	604
Troubleshooting (Problem Solving)	532
Problem Solving	422
Customer Service	420
Information Technology	403
Leadership	374
Planning	310
Writing	298

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 7c – Software and Programming Skills (n= 4,941)

Skills	Job Postings, Full Year 2022
Operating Systems	291
Microsoft Office	289
Microsoft Excel	284
Linux	245
SQL (Programming Language)	202
Windows Servers	200
Active Directory	192
Firewall	161
Microsoft PowerPoint	151
Python (Programming Language)	143

Source: Labor Insight/Jobs (Burning Glass)

Industry Concentration

Exhibit 8 shows the industries with the most Computer Networking and Information Technology postings in the South Central Coast region. Note: 18% of records have been excluded because they do not include an industry. As a result, the chart below may not be representative of the full sample.

Exhibit 8 – Industries Employing the Most in the Computer Networking and Information Technology Field, 2022

Industry	Occupation Group Jobs in Industry	% of Occupation Group in Industry
Professional, Scientific, and Technical Services	480	30%
Manufacturing	397	25%
Administrative and Support and Waste Management and Remediation Services	158	10%
Finance and Insurance	123	8%
Wholesale Trade	80	5%

Source: Labor Insight/Jobs (Burning Glass)

Certifications

Exhibit 9 lists the most in-demand certifications in the Computer Networking and Information Technology field. The top requested certification in job postings was Secret Clearance.

Exhibit 9 – Certifications (n= 1,619)

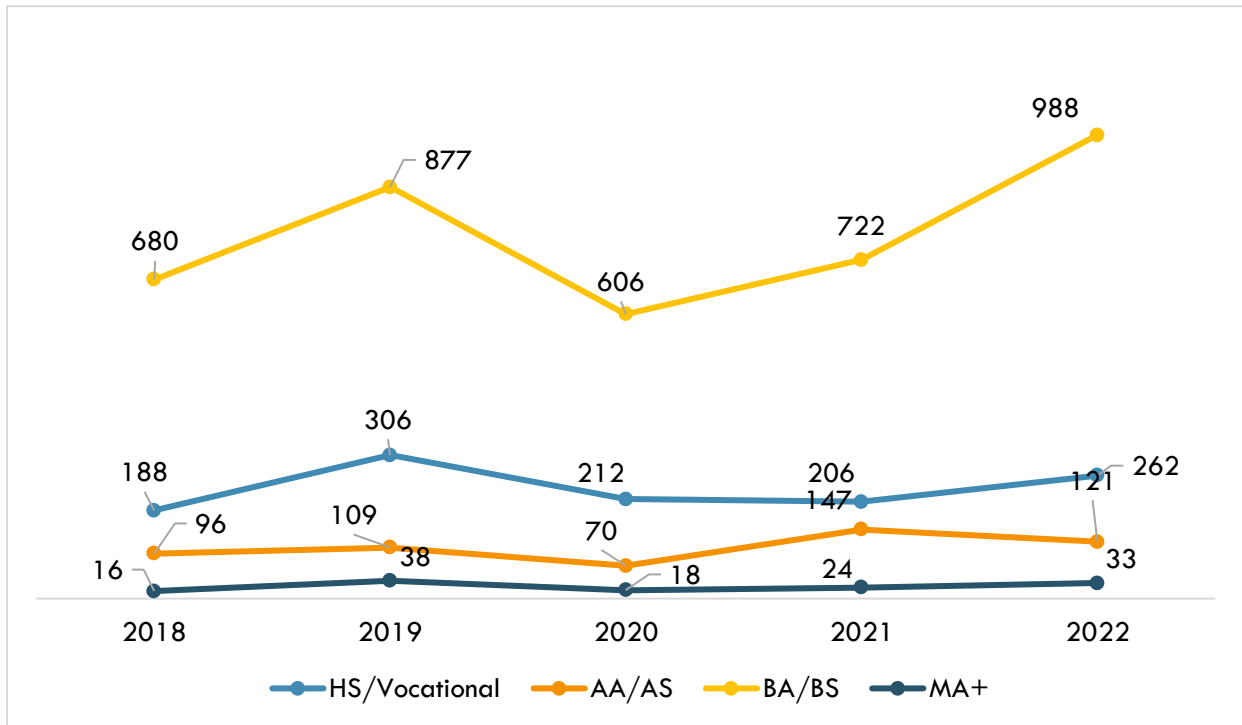
Certifications	Job Postings, Full Year 2022
Secret Clearance	197
Security Clearance	170
CompTIA Security+	139
Valid Driver's License	138
Top Secret-Sensitive Compartmented Information (TS/SCI Clearance)	97

Source: Labor Insight/Jobs (Burning Glass)

Job Postings - Minimum Educational Attainment Over Time

Exhibit 10 displays the change in job advertisements over the last five years for Computer Networking and Information Technology, according to the minimum advertised education. In 2022, there were 1,404 total job ads posted with a minimum advertised education, with 988 of them requiring a bachelor's degree.

Exhibit 10 – Educational Demand, Minimum Advertised



Source: Labor Insight / Jobs (Burning Glass)

Job Postings – Proportion of Job Postings by Minimum Educational Attainment Required

To gauge employer preference for candidates with particular education levels, the proportion of job postings by minimum advertised education appears in Exhibit 11. Employers posting job ads for Computer Networking and Information Technology have frequently sought candidates with a bachelor's degree.

Exhibit 11 – Occupational Demand by Education, Minimum Advertised

Minimum Education Requirement	2018	2019	2020	2021	2022
HS Diploma / Vocational Training	19%	23%	23%	19%	19%
Associate Degree	10%	8%	8%	13%	9%
Bachelor's Degree	69%	66%	67%	66%	70%
Graduate Degree	2%	3%	2%	2%	2%

Source: Labor Insight/ Jobs (Burning Glass)

Education and Training

Exhibit 12 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training needed to attain competency in the occupation.

Exhibit 12 – Education and Training Requirements

SOC	Occupation	Typical entry-level education	Typical on-the-job training
15-1211	Computer Systems Analysts	Bachelor's degree	None
15-1244	Network and Computer Systems Administrators	Bachelor's degree	None
15-1231	Computer Network Support Specialists	Associate's degree	None

Source: Bureau of Labor Statistics Employment Projections (Educational Attainment)

Regional Completions and Openings

There were 364 regional completions (2021) and 350 regional openings (2021) in the South Central Coast region aligned with programs related to the occupations in this report.

Exhibit 13 – Completions and Openings

24 Regional Institutions had Related Programs (2021)	364 Regional Completions (2021)	350 Annual Openings (2021)
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Source: Economic Modeling Specialists International (EMSI)

Related Programs

CIP Code	Program	Completions (2021)
11.1003	Computer and Information Systems Security/Auditing/Information Assurance	132
11.0103	Information Technology	89
11.0901	Computer Systems Networking and Telecommunications	61
11.1006	Computer Support Specialist	43
11.0101	Computer and Information Sciences, General	17
11.0201	Computer Programming/Programmer, General	14
11.1001	Network and System Administration/Administrator	6
11.0899	Computer Software and Media Applications, Other	2
52.1201	Management Information Systems, General	0

Source: Economic Modeling Specialists International (EMSI)

CCC and Non-CCC Awards

Exhibit 14 lists the number of completers from programs related to Computer Networking and Information Technology in the South Central Coast region.

Exhibit 14 – CCC and Non-CCC Awards the South Central Coast, 2021

CCC Programs	Completers
Moorpark College	94
Cuesta College	60
Allan Hancock College	29
Oxnard College	28
Antelope Valley College	24
Santa Barbara City College	20
College of the Canyons	9
Non-CCC Programs	Completers
Laurus College	33
California Lutheran University	26
California State University-Channel Islands	18
Westmont College	10
Ventura Adult and Continuing Education	6
The Master's University and Seminary	5
California Institute of the Arts	2

Source: Economic Modeling Specialists International (EMSI)

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of regional Computer Networking and Information Technology Programs (TOP: 0708.10) for the 2019-2020 academic year.

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- 59% of students are **employed within a year** after completing a program.
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Sources

O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

Notes

Data included in this analysis represent the labor market demand for relevant positions most closely related to Computer Networking and Information Technology. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions. All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.