

# **Education Report**

# Geography

California



4
7
8
9
10
11
12
19



# Definition of Geography, CIP 45.0701

A program that focuses on the systematic study of the spatial distribution and interrelationships of people, natural resources, plant and animal life. Includes instruction in historical and political geography, cultural geography, economic and physical geography, regional science, cartographic methods, remote sensing, spatial analysis, and applications to areas such as land-use planning, development studies, and analyses of specific countries, regions, and resources.



# Awards

The table below is a list of postsecondary awards in CIP 45.0701 that were granted by institutions located in California in the 2021 academic year.

Schools	Certs & 2yr Awards <sup>1</sup>	4yr Awards <sup>2</sup>	Post-Grad Awards <sup>3</sup>	Avg Net Price <sup>4</sup>
University of California-Los Angeles		71	10	\$13,393
California State University-Long Beach		49	9	\$9,171
Sonoma State University		45		\$7,055
California State University- Northridge		41	3	\$8,708
San Diego State University		32	12	\$6,867
San Francisco State University		39	2	\$13,641
California State University- Fullerton		36	3	\$4,939
California State University- Sacramento		37		\$7,778
University of California-Santa Barbara		10	22	\$17,333
California State Polytechnic University-Pomona		24		\$12,942
California State Polytechnic University-Humboldt		23		\$13,904
Pasadena City College	21			\$6,466
Cerritos College	16			\$9,557
California State University- Dominguez Hills		15		\$4,500
California State University-Chico		13		\$13,749
Orange Coast College	13			\$6,836
California State University-Los Angeles		10	2	\$2,695
Cosumnes River College	11			\$7,223
California State University-East Bay		9		\$12,631
California State University- Stanislaus		9		\$7,230
Fullerton College	9			\$11,191
Long Beach City College	9			\$6,550
Saddleback College	9			\$7,918
Santa Monica College	9			\$6,380
Ventura College	9			\$3,971
San Diego Mesa College	8			\$7,663
Santa Barbara City College	8			\$14,000
California State University- Fresno		6		\$6,336
Cypress College	6			\$7,951



Schools	Certs & 2yr Awards <sup>1</sup>	4yr Awards <sup>2</sup>	Post-Grad Awards <sup>3</sup>	Avg Net Price <sup>4</sup>
East Los Angeles College	6			\$12,028
Santa Ana College	6			\$6,351
Santiago Canyon College	6			\$5,879
California State University-San Bernardino		5		\$3,254
College of the Canyons	5			\$6,400
Golden West College	5			\$5,433
Grossmont College	5			\$5,999
Sacramento City College	5			\$7,788
San Jose State University		3	2	\$14,603
Antelope Valley Community College District	4			\$6,203
El Camino Community College District	4			\$13,296
Oxnard College	4			\$3,441
Palomar College	4			\$6,659
West Valley College	4			\$6,890
American River College	3			\$8,101
Cabrillo College	3			\$18,139
Chabot College	3			\$8,576
Chaffey College	3			\$13,939
Clovis Community College	3			\$6,305
Los Angeles Valley College	3			\$11,833
Mt San Antonio College	3			\$5,774
Riverside City College	3			\$7,161
Sierra College	3			\$5,921
Diablo Valley College	2			\$8,878
Folsom Lake College	2			\$8,276
Foothill College	2			\$9,820
Glendale Community College	2			\$7,823
Imperial Valley College	2			\$2,300
Merced College	2			\$13,426
Modesto Junior College	2			\$14,421
Moorpark College	2			\$4,856
Ohlone College	2			\$12,787
Canada College	1			\$5,923
City College of San Francisco	1			\$9,261
College of the Desert	1			\$14,179
Contra Costa College	1			\$9,405



Schools	Certs & 2yr Awards <sup>1</sup>	4yr Awards <sup>2</sup>	Post-Grad Awards <sup>3</sup>	Avg Net Price <sup>4</sup>
Irvine Valley College	1			\$4,860
Lake Tahoe Community College	1			\$7,867
Laney College	1			\$16,494
Los Angeles Pierce College	1			\$12,995
Mt San Jacinto Community College District	1			\$7,704
San Bernardino Valley College	1			\$9,621
San Diego City College	1			\$8,370
Southwestern College	1			\$6,789
Victor Valley College	1			\$12,848
Butte College				\$10,736
College of Alameda				\$12,583
College of Marin				\$7,717
Crafton Hills College				\$20,456
Feather River Community College District				\$11,415
Las Positas College				\$7,675
Los Angeles Southwest College				\$8,651
Mendocino College				\$8,465
MiraCosta College				\$6,946
San Jose City College				\$17,618
Shasta College				\$7,973
Solano Community College				\$5,950
University of California-Berkeley				\$17,652
University of California-Davis				\$16,640
University of Southern California				\$26,021
West Hills College-Coalinga				\$11,458
West Hills College-Lemoore				\$13,571
West Los Angeles College				\$10,259
Total	244	477	65	

1. Undergraduate certificates and associate's degrees

2. Bachelor's degrees and post-baccalaureates

3. Master's, post-master's, and doctorates

4. Average net price represents full-time beginning undergraduate students who paid the in-state or in-district tuition rate and were awarded grant or scholarship aid from federal, state or local governments, or the institution. Data as of the 2020-2021 academic year.

Awards data are per the National Center for Education Statistics (NCES) and JobsEQ for the 2021 academic year. Any programs shown here reflect only data reported to the NCES; reporting is required of all schools participating in any federal finance assistance program authorized by Title IV of the Higher Education Act of 1965, as amended—other training providers in the region that do not report data to the NCES are not reflected in the above.



# **Occupation Crosswalk**

The below table lists all occupations linked with the program, Geography, CIP 45.0701.

		Educat		Educat	ional Attai	nment			
		Typical Education Needed for Entry	Work Experience in a Related Occupation	Typical On-the-Job Training Needed to Attain Competency in the Occupation	No College	Some College, No Degree	Associate's Degree	Bachelor's Degree	Postgraduat e Degree
11-9199	Managers, All Other	Bachelor's degree	Less than 5 years	None	12%	12%	6%	42%	28%
17-3031	Surveying and Mapping Technicians	High school diploma or equivalent	None	Moderate-term on- the-job training	30%	29%	26%	13%	3%
19-3092	Geographers	Bachelor's degree	None	None	1%	4%	3%	33%	58%
25-1064	Geography Teachers, Postsecondary	Doctoral or professional degree	None	None	1%	1%	1%	14%	82%

Education and training requirements are from the Bureau of Labor Statistics (BLS); educational attainment mix are regional data modeled by Chmura using Census educational attainment data projected to 2022Q4 along with source data from the BLS

#### Definition of Managers, All Other (11-9199)

All managers not listed separately.

#### Definition of Surveying and Mapping Technicians (17-3031)

Perform surveying and mapping duties, usually under the direction of an engineer, surveyor, cartographer, or photogrammetrist, to obtain data used for construction, mapmaking, boundary location, mining, or other purposes. May calculate mapmaking information and create maps from source data, such as surveying notes, aerial photography, satellite data, or other maps to show topographical features, political boundaries, and other features. May verify accuracy and completeness of maps.

#### Definition of Geographers (19-3092)

Study the nature and use of areas of the Earth's surface, relating and interpreting interactions of physical and cultural phenomena. Conduct research on physical aspects of a region, including land forms, climates, soils, plants, and animals, and conduct research on the spatial implications of human activities within a given area, including social characteristics, economic activities, and political organization, as well as researching interdependence between regions at scales ranging from local to global.

Definition of Geography Teachers, Postsecondary (25-1064)

Teach courses in geography. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.



# **Occupation Details**

As of 2022Q4, total employment for occupations linked to Geography in California was 103,272. Over the past three years, linked occupations added 25,215 jobs in the region and are expected to need in aggregate approximately 64,511 newly trained workers over the next seven years.

SOC	Occupation	Empl	Wages <sup>2</sup>	LQ	Unempl	Rate	Job Ads <sup>3</sup>	Ann %	Demand	Exits	Transfers	Growth	Growth %
11-9199	3,	98,004	\$164,300	1.35	1,405	1.5%	1,394	10.6%	59,926	21,848	33,829	4,248	0.6%
17-3031	Surveying and Mapping Technicians	4,933	\$78,500	0.68	60	1.3%	139	-2.4%	4,370	1,390	2,920	59	0.2%
25- 1064	Geography Teachers, Postsecondary	232	\$138,000	0.53	4	1.9%	25	-1.4%	146	75	63	9	0.5%
19- 3092	Geographers	104	\$95,400	0.60	0	n/a	3	-2.0%	68	17	50	1	0.2%
	Total - Linked Occupations	103,272	\$160,100	1.28	1,470	1.5%	1,561	9.8%	64,511	23,330	36,863	4,318	0.6%
	Total - All Occupations	19 219 968	\$71 900	1 00	797 161	4 1%	547 112	0.6%	17 029 863	6 722 656	9 379 252	927 955	0.7%

#### Snapshot of Occupations Linked to Geography in California<sup>1</sup>

Source: JobsEQ<sup>®</sup>

Data as of 2022Q4 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data represent the average for all Covered Employment

3. Data represent found online ads active within the last thirty days in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.



Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2022Q3, imputed where necessary with preliminary estimates updated to 2022Q4. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns. Occupation unemployment figures are imputed by Chmura.



# Employment by Industry

The table illustrates the industries in California which most employ occupations linked to Geography. The single industry most employing these occupations in the region is Management of Companies and Enterprises, NAICS 5511. This industry employs 5,401 workers in the linked occupations—employment which is expected to increase by 135 jobs over the next ten years; furthermore, 4,324 additional new workers in these linked occupations will be needed for this industry due to separation demand, that is, to replace workers in this occupation and industry that retire or move into a different occupation.

		Curre	nt	10-Year Demand			
NAICS Code	Industry Title	% of Occ Empl	Empl	Exits	Transfers	Empl Growth	Total Demand
5511	Management of Companies and Enterprises	5.2%	5,401	1,694	2,631	135	4,459
5413	Architectural, Engineering, and Related Services	4.7%	4,875	1,810	3,543	-1	5,352
5416	Management, Scientific, and Technical Consulting Services	4.6%	4,780	1,562	2,443	510	4,514
5417	Scientific Research and Development Services	4.5%	4,671	1,516	2,354	462	4,332
9221	Justice, Public Order, and Safety Activities	3.5%	3,663	1,145	1,810	-3	2,952
2361	Residential Building Construction	3.4%	3,552	1,104	1,709	32	2,845
5415	Computer Systems Design and Related Services	3.3%	3,439	1,157	1,815	568	3,540
9211	Executive, Legislative, and Other General Government Support	2.9%	2,959	936	1,484	57	2,477
5611	Office Administrative Services	2.5%	2,592	836	1,294	227	2,357
5613	Employment Services	2.4%	2,527	810	1,261	170	2,242
6113	Colleges, Universities, and Professional Schools	2.4%	2,471	818	1,218	194	2,229
9281	National Security and International Affairs	2.2%	2,316	700	1,092	-106	1,685
9231	Administration of Human Resource Programs	2.0%	2,110	663	1,048	22	1,733
6221	General Medical and Surgical Hospitals	1.8%	1,894	593	918	45	1,555
2362	Nonresidential Building Construction	1.5%	1,544	484	752	37	1,273
5121	Motion Picture and Video Industries	1.5%	1,521	506	784	246	1,536
5192	Web Search Portals, Libraries, Archives, and Other Information Services	1.4%	1,485	513	795	371	1,680
5241	Insurance Carriers	1.4%	1,453	466	722	112	1,301
5419	Other Professional, Scientific, and Technical Services	1.4%	1,428	457	716	81	1,254
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	1.4%	1,397	437	676	30	1,143
	All Others	45.7%	47,195	15,127	23,598	3,036	41,762

#### Industry Distribution for Occupations Linked to Geography in California

Source: JobsEQ®

Data as of 2022Q4 except wages which are as of 2021. Note that occupation-by-industry wages represent adjusted national data and may not be consistent with regional, all-industry occupation wages shown elsewhere in JobsEQ.

Note: Figures may not sum due to rounding.

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2022Q3, imputed where necessary with preliminary estimates updated to 2022Q4. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.



# **Geographic Distribution**

The map below illustrates the county-level distribution of employed workers in California in occupations linked to Geography. Employment is shown by place of work.

California, Occupation Concentration by Place of Work for Occupations Linked to Geography report



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#### Top Counties with Employment Linked to Geography, 2022Q4

Region	Employment
Los Angeles County, California	25,469
San Diego County, California	10,272
Orange County, California	9,610
Santa Clara County, California	8,347
San Francisco County, California	6,018
Alameda County, California	5,113
Sacramento County, California	4,386
San Bernardino County, California	3,555
San Mateo County, California	3,457
Riverside County, California	3,395

#### Source: JobsEQ®

Occupation employment data are estimated via industry employment data and the industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2022Q3, imputed where necessary with preliminary estimates updated to 2022Q4.



# **Demographic Profile**

The population in California was 39,346,023 per American Community Survey data for 2016-2020.

Of individuals 25 to 64 in California, 35.4% have a bachelor's degree or higher which compares with 34.3% in the nation. Per American Community Survey 2016-2020 estimates, the region has about 576,714 students enrolled in grade 12.

Summary <sup>1</sup>	Summary <sup>1</sup>					
	Percen	t	Value	e		
	California	USA	California	USA		
Demographics						
Population (ACS)	_	_	39,346,023	326,569,308		
Male	49.7%	49.2%	19,562,882	160,818,530		
Female	50.3%	50.8%	19,783,141	165,750,778		
Median Age <sup>2</sup>	_	_	36.7	38.2		
Under 18 Years	22.8%	22.4%	8,956,641	73,296,738		
18 to 24 Years	9.5%	9.3%	3,724,239	30,435,736		
25 to 34 Years	15.3%	13.9%	6,007,913	45,485,165		
35 to 44 Years	13.3%	12.7%	5,233,903	41,346,677		
45 to 54 Years	12.8%	12.7%	5,039,155	41,540,736		
55 to 64 Years	12.0%	12.9%	4,739,675	42,101,439		
65 to 74 Years	8.3%	9.4%	3,270,380	30,547,950		
Population Growth						
Population (Pop Estimates) <sup>4</sup>	_	_	39,029,342	333,287,557		
Population Annual Average Growth <sup>4</sup>	0.3%	0.6%	108,479	1,940,990		
People per Square Mile	_	_	250.4	94.3		
Educational Attainment, Age 25-64						
No High School Diploma	15.2%	10.5%	3,199,850	17,929,220		
High School Graduate	20.4%	25.4%	4,282,776	43,289,555		
Some College, No Degree	21.0%	20.5%	4,412,172	34,959,338		
Associate's Degree	8.0%	9.3%	1,678,082	15,776,790		
Bachelor's Degree	22.6%	21.6%	4,741,354	36,888,244		
Postgraduate Degree	12.9%	12.7%	2,706,412	21,630,870		
Social						
Poverty Level (of all people)	12.6%	12.8%	4,853,434	40,910,326		
Households Receiving Food Stamps/SNAP	9.0%	11.4%	1,183,873	13,892,407		
Enrolled in Grade 12 (% of total population)	1.5%	1.3%	576,714	4,358,865		
Disconnected Youth <sup>3</sup>	1.9%	2.5%	38,451	433,164		
Children in Single Parent Families (% of all children)	32.8%	34.0%	2,796,858	23,628,508		
Uninsured	7.2%	8.7%	2,806,173	28,058,903		
Speak English Less Than Very Well (population 5 yrs and over)	17.4%	8.2%				

Source: JobsEQ®

1. American Community Survey 2016-2020, unless noted otherwise

2. Median values for certain aggregate regions (such as MSAs) may be estimated as the weighted averages of the median values from the composing counties.

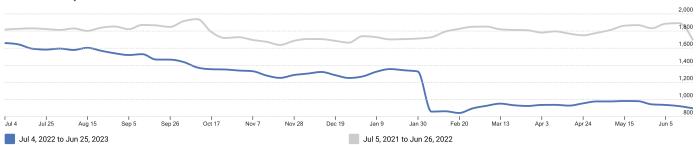
3. Disconnected Youth are 16-19 year olds who are (1) not in school, (2) not high school graduates, and (3) either unemployed or not in the labor force.

4. Census Population Estimate for 2022, annual average growth rate since 2012. Post-2019 data for Connecticut counties are imputed by Chmura.



# RTI (Job Postings)

Active Job Ads by Date



#### Occupations

		Active Job	
SOC	Occupation	Ads	
11-9199.02	Compliance Managers	2,213	
11-9199.00	Managers, All Other	2,011	
11-9199.08	Loss Prevention Managers	1,215	
17-3031.00	Surveying and Mapping Technicians	564	
11-9199.01	Regulatory Affairs Managers	206	
11-9199.11	Brownfield Redevelopment Specialists and Site Managers	106	
11-9199.09	Wind Energy Operations Managers	100	
25-1064.00	Geography Teachers, Postsecondary	59	
19-3092.00	Geographers	28	
11-9199.10	Wind Energy Development Managers	14	

### Locations

	Active Job
Location	Ads
Los Angeles, California	317
San Francisco, California	275
San Diego, California	255
Sacramento, California	172
San Jose, California	135
Irvine, California	127



#### Locations

	Active
Location	Job Ads
Fresno, California	69
Oakland, California	69
Fremont, California	62
Santa Clara, California	46



## Employers

	Active	
	dol	
Employer Name	Ads	
HomeDepot	439	
Abbvie	84	
Marriott	70	
United Health Group	64	
Meta	51	
Amazon.com Services LLC	50	
Pacific Gas And Electric Company	50	
Wal-Mart, Inc	50	
Target	46	
Edison International	38	

### Certifications

	Active	
	dol	
Certificate Name	Ads	
Driver's License	198	
First Aid Certification	152	
Certification in Cardiopulmonary Resuscitation (CPR)	150	
Project Management Professional (PMP)	77	
Certified Information Systems Auditor (CISA)	60	
Loss Prevention Certified (LPC)	55	
Certified Information Systems Security Professional (CISSP)	54	
Licensed Professional Engineer	44	
Certified Information Security Manager (CISM)	43	
Certified Public Accountant (CPA)	43	



#### Hard Skills

	Active	
	dol	
Skill Name	Ads	
Microsoft Excel	1,276	
Microsoft Office	1,210	
Microsoft PowerPoint	685	
Microsoft Outlook	475	
Microsoft Word	439	
Closed Circuit Television Systems (CCTV)	412	
Presentation	365	
Loss Prevention	322	
Internal Auditing	304	
Auditing	231	

#### Soft Skills

	Active
	Job
Skill Name	Ads
Communication (Verbal and written skills)	4,240
Cooperative/Team Player	2,706
Supervision/Management	1,920
Organization	1,306
Problem Solving	1,274
Detail Oriented/Meticulous	1,202
Analytical	1,141
Project Management	1,122
Interpersonal Relationships/Maintain Relationships	1,119
Self-Motivated/Ability to Work Independently/Self Leadership	1,047



#### Job Titles

	Active	
	Job	
Job Title	Ads	
Asset Protection Specialist	442	
Loss Prevention Officer	148	
Regional Manager	126	
Compliance Manager	92	
Development Director	89	
Shop Manager	57	
Asset Protection Operations Coach	52	
Loss Prevention Manager	42	
Site Survey Technician	36	
Survey Technician	34	

### Job Types

	Active
	Job
Туре	Ads
Full-Time	3,515
Remote	554
Permanent	534
Temporary (unspecified)	152
Part-Time	151
Temp-to-Hire	27
Temporary (long-term)	25
Temporary (short-term)	16
Remote Not Indicated	5,962



#### Programs

	Active	
	Job	
Program Name	Ads	
Engineering	489	
Business	344	
Business Administration	276	
Science	184	
Finance	176	
Accounting	138	
Geology	127	
Biology	122	
Environmental Science	109	
Business Management	108	

### **Education Levels**

	Active
	dof
Minimum Education Level	Ads
Bachelor's degree	2,896
High school diploma or equivalent	616
Associate's degree	195
Master's degree	170
Doctoral or professional degree	69
Unspecified/other	2,570



# California Regional Map





# FAQ

## What is CIP?

The 2010 Classification of Instructional Programs (CIP) is taxonomy of instructional program classifications and descriptions. It was developed and has been updated by the U.S. Department of Education's National Center for Education Statistics (NCES).

### What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 804 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 22 major groups, 95 minor groups, and 452 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

### What is the source of the job ads?

Job ads data are online job posts from the Real-Time Intelligence (RTI) data set, produced wholly by Chmura and gleaned from over 40,000 websites. Data reflect ads active during the last twelve month period ending 07/05/2023 and advertised for any Zip Code Tabulation Area in or intersecting with the region for which this report was produced. Historical ad volume is revised as additional data are made available and processed. Since many extraneous factors can affect short-term volume of online job postings, time-series data can be volatile and should be used with caution. All ad counts represent deduplicated figures.

### What is the program-to-occupation crosswalk?

Training programs are classified according to the Classification of Instructional Programs (CIP codes). For relating training programs, this report uses a modified version of the CIP to SOC crosswalk from the National Center for Education Statistics (NCES). While this is a very helpful crosswalk for estimating occupation production from training program awards data, the crosswalk is neither perfect nor comprehensive. Indeed, it is hard to imagine such a crosswalk being perfect since many training program graduates for one reason or another do not end up employed in occupations that are most related to the training program from which they graduated. Therefore, the education program analyses should be considered in this light.

As an example of the many scenarios that may unfold, consider a journalism degree that crosswalks into three occupations: editors, writers, and postsecondary communications teachers. Graduates with a journalism degree may get a job in one of these occupations—and that may be the most-likely scenario—but a good number of these graduates may get a job in a different occupation altogether (the job may be somewhat related, such as a reporter, or the job may be totally unrelated, such as a real estate agent). Furthermore, a graduate may stay in school or go back to school for a degree that will lead to other occupation possibilities. Still another possibility includes the graduate not entering the labor market (maybe being unemployed, being a non-participant, or moving to another region).

### What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth



demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

### What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an occupation (or industry) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

### What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the "all industry" level to the 6-digit level. The first two digits define the top level category, known as the "sector," which is the level examined in this report.

#### About This Report

This report and all data herein were produced by JobsEQ®, a product of Chmura Economics & Analytics. The information contained herein was obtained from sources we believe to be reliable. However, we cannot guarantee its accuracy and completeness.

