

November 2020

Labor Market Analysis

Graphic Art and Design



Prepared by the Central Valley/Mother Lode Center of Excellence

Table of Contents

- Summary3
- Key findings..... 3
- Introduction4
- Occupational Demand..... 5
- Wages6
- Job Postings.....7
- Salaries7
- Education..... 8
- Baseline and Specialized Skills..... 8
- Software Skills 9
- Certifications.....9
- Education, Work Experience & Training..... 9
- Supply 10
- Student Outcomes..... 11
- Conclusion 12
- Recommendation..... 12
- Appendix A: Methodology & Data Sources..... 13

COVID-19 Statement: This report includes employment projection data by EMSI. 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 or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they 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. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

If for any reason this document is not accessible or if you have specific needs for readability, please contact us and we will do our utmost to accommodate you with a modified version. To make a request, contact Nora Seronello by phone at (209) 575-6894 or by email seronellon@mjc.edu.

Summary

Please note the COVID-19 statement on page 2 when considering this report's findings.

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for graphic art and design. Seven occupations related to graphic art and design were identified for Taft College:

- 27-1024, Graphic Designers
- 27-4021, Photographers
- 15-1257, Web Developers and Digital Interface Designers
- 27-1011, Art Directors
- 27-1014, Special Effects Artists and Animators
- 27-1021, Commercial and Industrial Designers
- 43-9031, Desktop Publishers

Key findings:

- **Occupational demand** — More than 2,500 workers were employed in jobs related to graphic art and design in 2019 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. The largest occupation is graphic designers with 879 workers in 2019, a projected growth rate of 4% over the next five years, and 97 annual openings.
- **Wages** — Commercial and industrial designers earn the highest entry-level wages, \$23.24/hour in the subregion and \$26.87/hour in the region. The entry-level wages for art directors fall below the subregion's living wage, \$10.30/hour.
- **Employers** — Employers with the most job postings in the subregion are Anthem Blue Cross, Perpetual Talent Solutions, and Ironbelly Tech.
- **Occupational titles** — The most common occupational title in job postings in the subregion is web developers. The most common job title is graphic designer.
- **Skills and certifications** — The top baseline skill is communication, the top specialized skill is graphic designer, and the top software skill is Adobe Photoshop. The most in-demand certification is a driver's license.
- **Education** — Four of the seven occupations typically require a bachelor's degree. A high school diploma or equivalent is typically required for photographers, and an associate degree is typically required for desktop publishers, and web developers and digital interface designers.
- **Supply** — Analysis of postsecondary completions in the region shows that on average 74 awards were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and supply, there is an undersupply of 238 trained workers in the subregion and 395 workers in the region. The Center of Excellence recommends that Taft College work with the ICT/DM Regional Director, the college's advisory board, and local industry in the development of programs to address the shortage of graphic art and design workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Taft College to provide labor market information for graphic art and design. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use.

The average living wage for a single adult in the South Central Valley/Southern Mother Lode (SCV/SML) subregion is \$10.30/hour.¹

Analysis of the program and occupational data related to graphic art and design resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 27-1024, Graphic Designers
- 27-4021, Photographers
- 15-1257, Web Developers and Digital Interface Designers
- 27-1011, Art Directors
- 27-1014, Special Effects Artists and Animators
- 27-1021, Commercial and Industrial Designers
- 43-9031, Desktop Publishers

Commented [LM1]: Nora, this SOC code shows up as Multimedia Artists and Animators in ONET. Not sure if the wrong SOC title is used here.

The occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O*NET OnLine are shown below. O*NET data was not available for web developers and digital interface designers, and special effects artists and animators.

Graphic Designers

Job Description: Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects.

Knowledge: Design, Communications and Media, English Language, Fine Arts, Computers and Electronics

Skills: Active Listening, Critical Thinking, Speaking, Reading Comprehension, Active Learning

Photographers

Job Description: Photograph people, landscapes, merchandise, or other subjects, using digital or film cameras and equipment. May develop negatives or use computer software to produce finished images and prints. Includes scientific photographers, aerial photographers, and photojournalists.

Knowledge: Customer and Personal Service, Sales and Marketing, Computers and Electronics, Fine Arts, English Language

Skills: Active Listening, Speaking, Service Orientation, Social Perceptiveness, Active Learning

Art Directors

Job Description: Formulate design concepts and presentation approaches for visual communications media, such as print, broadcasting, and advertising. Direct workers engaged in artwork or layout design.

Knowledge: Sales and Marketing, English Language, Communications and Media, Computers and Electronics, Customer and Personal Service

¹ The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

Skills: Active Listening, Speaking, Judgment and Decision Making, Time Management, Complex Problem Solving

Commercial and Industrial Designers

Job Description: Develop and design manufactured products, such as cars, home appliances, and children's toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design.

Knowledge: Design, Engineering and Technology, Mechanical, Production and Processing, Computers and Electronics

Skills: Active Listening, Reading Comprehension, Complex Problem Solving, Critical Thinking, Speaking

Desktop Publishers

Job Description: Format typescript and graphic elements using computer software to produce publication-ready material.

Knowledge: Computers and Electronics, Design, English Language, Production and Processing, Communications and Media

Skills: Critical Thinking, Reading Comprehension, Active Listening, Judgment and Decision Making, Speaking

Occupational Demand

The South Central Valley/Southern Mother Lode subregion employed 2,546 workers in graphic art and design occupations in 2019 (Exhibit 1). The largest occupation is graphic designers with 879 workers in 2019. This occupation is projected to grow by 4% over the next five years and has the greatest number of projected annual openings, 97.

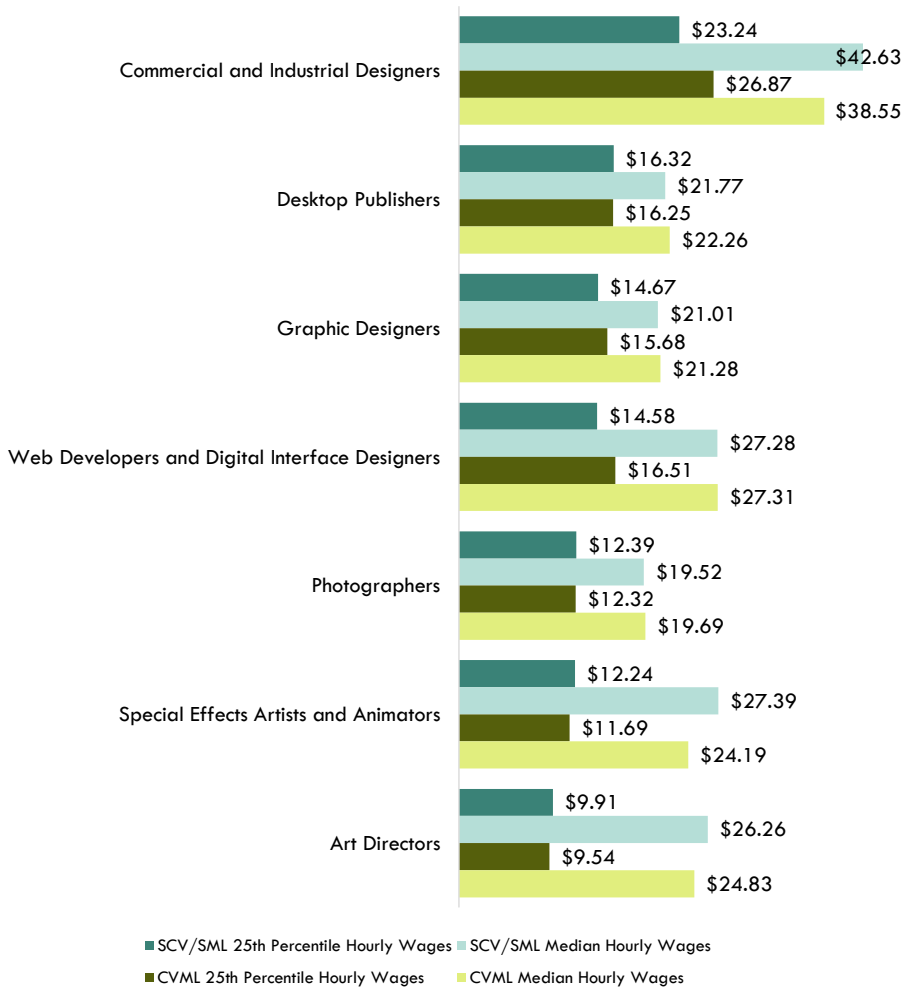
Exhibit 1. Graphic art and design employment and occupational projections in the SCV/SML subregion

Occupation	2019 Jobs	2024 Jobs	5-Year Change	5-Year % Change	Annual Openings
Graphic Designers	879	910	31	4%	97
Photographers	572	570	(2)	(0%)	62
Web Developers and Digital Interface Designers	404	458	54	13%	43
Art Directors	320	340	20	6%	40
Special Effects Artists and Animators	258	264	6	3%	31
Commercial and Industrial Designers	92	96	5	5%	10
Desktop Publishers	22	18	(4)	(16%)	2
TOTAL	2,546	2,655	110	4%	286

Wages

Exhibit 2 compares the entry-level and experienced wages of the graphic art and design occupations. Commercial and industrial designers earn the highest entry-level wages, \$23.24/hour in the subregion and \$26.87/hour in the region. The entry-level wages for art directors fall below the subregion's living wage, \$10.30/hour.

Exhibit 2. Entry-level and experienced wage comparison in the SCV/SML subregion and region



Job Postings

There were 249 job postings for the seven occupations in the SCV/SML subregion from May to October 2020.² The employers with the most job postings are listed in Exhibit 3.

Exhibit 3. Top employers of graphic art and design occupations by number of job postings

Employer	Job Postings	% Job Postings
Anthem Blue Cross	15	7%
Perpetual Talent Solutions	8	4%
Ironbelly Tech	6	3%
Nucamp	6	3%
Mom365	5	2%
Raceway Express Carwash	5	2%
Spicy Green Book	5	2%
Table Mountain Casino	5	2%
Beer Monument Works Incorporated	4	2%
Healthcare Finance Direct	4	2%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across seven O*NET OnLine occupations. The occupational title web developers is listed in 114 job postings. Note how a higher proportion of job postings are for this occupational title. Common job titles in postings include graphic designer in 26 job postings, photographer in 13 job postings, and junior website graphic designer - Ui/Ux in 8 job postings.

Exhibit 4. Top occupational titles in job postings for graphic art and design

Occupational Title	Job Postings	% of Job Postings
Web Developers	114	46%
Graphic Designers	59	24%
Photographers	58	23%
Commercial and Industrial Designers	9	4%
Art Directors	5	2%
Desktop Publishers	2	1%
Multimedia Artists and Animators	2	1%

Salaries

Exhibit 5 shows the “Market Salaries” for graphic art and design occupations that are calculated by Burning Glass which uses a machine learning model built off of millions of job postings every year, and accounts for adjustments based on locations, industry, skills, experience, education requirements, among other variables.

² Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Exhibit 5. Salaries for graphic art and design occupations

Market Salary Percentile	Salary Amount
10th Percentile	\$27,946
25th Percentile	\$38,449
50th Percentile	\$53,525
75th Percentile	\$77,924
90th Percentile	\$104,393

Education

Of the 249 job postings, 105 listed an education level preferred for the positions being filled. Among those, 65% requested a bachelor’s degree, 30% requested high school or vocational training, and 7% requested an associate degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below total more than 100%.

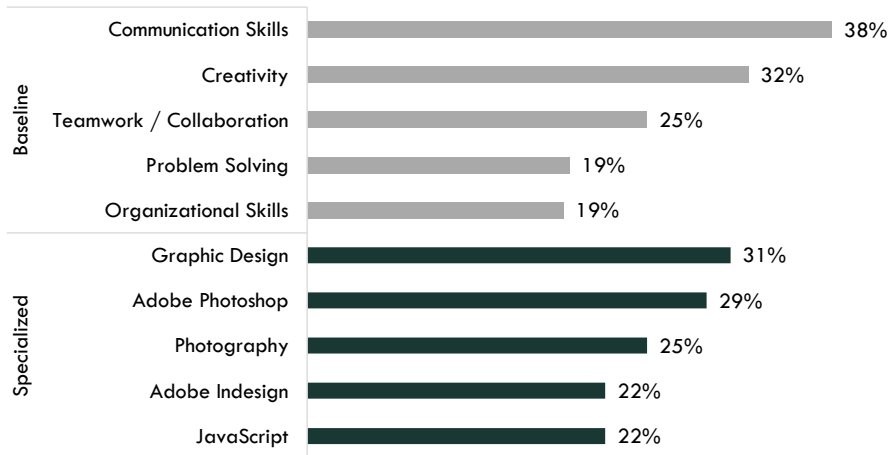
Exhibit 6. Education levels requested in job postings for graphic art and design occupations

Education level	Job Postings	% of Job Postings
Bachelor's degree	68	65%
High school or vocational training	31	30%
Associate degree	7	7%
Master's degree	7	7%

Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are communication, 38% of job postings, creativity, 32%, and teamwork/collaboration, 25%. The top three specialized skills are graphic design, 31% of job postings, Adobe Photoshop, 29%, and photography, 25%.

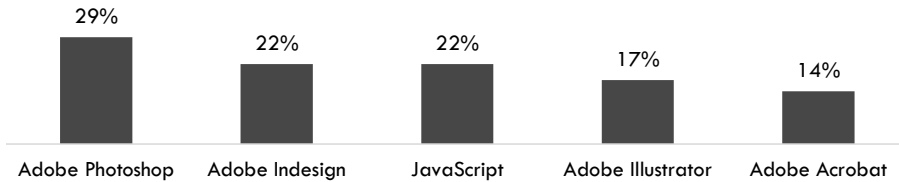
Exhibit 7. In-demand graphic art and design baseline and specialized skills



Software Skills

Analysis also included the software skills most in demand by employers. Adobe Photoshop and Adobe InDesign were the top two software skills identified in job postings (Exhibit 8).

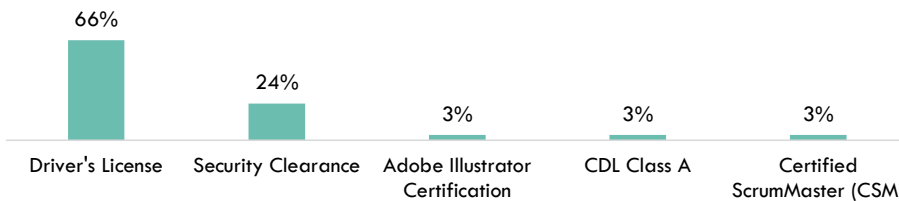
Exhibit 8. In-demand graphic art and design software skills



Certifications

Of the 249 job postings, 29 contained certification data. Among those, 66% indicated a need for a driver's license. The next top certifications are security clearance and Adobe Illustrator certification (Exhibit 9). (Due to the low number of job postings with certifications listed, the chart below may not be representative of the full sample.)

Exhibit 9. Top graphic art and design certifications requested in job postings



Education, Work Experience & Training

Four of the seven occupations typically require a bachelor's degree (Exhibit 10). A high school diploma or equivalent is typically required for photographers, and an associate degree is typically required for desktop publishers, and web developers and digital interface designers.

Exhibit 10. Education, work experience, training, and Current Population Survey results for graphic art and design occupations³

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Art Directors	Bachelor's degree	5 years or more	None	27.2%
Special Effects Artists and Animators	Bachelor's degree	None	None	27.2%
Commercial and Industrial Designers	Bachelor's degree	None	None	28.3%

³ "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Graphic Designers	Bachelor's degree	None	None	28.3%
Photographers	High school diploma or equivalent	None	Moderate-term	34.2%
Desktop Publishers	Associate degree	None	Short-term	41.1%
Web Developers and Digital Interface Designers	Associate degree	None	None	34.7%

Supply

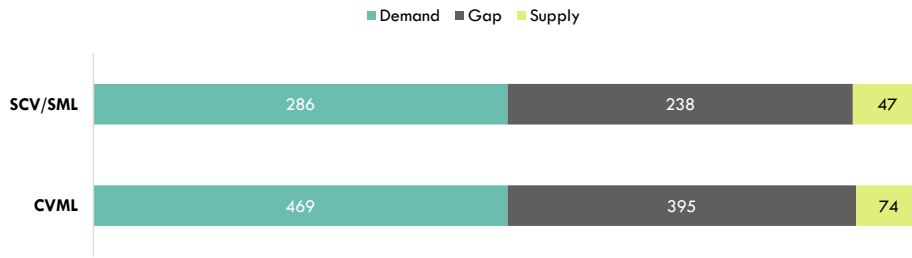
Analysis of program data from the California Community Colleges Chancellor's Office Data Mart included the TOP and CIP codes: 061400 - Digital Media, 101300 - Commercial Art, 103000 - Graphic Art and Design, 11.0801 - Web Page, Digital/Multimedia and Information Resources Design, and 50.0409 - Graphic Design. Analysis of the last three years of TOP code data shows that, on average, 74 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

Exhibit 11. Postsecondary supply for graphic art and design occupations in the region

TOP Code - Title	Colleges	Associate Degree	Award 1<2 Academic Years	Certificate 12<18 Units	Certificate 18<30 Units	Certificate 30<60 Units	Certificate 6<18 Units	Sub-total
061400 - Digital Media	Columbia	2			1		1	3
	Sequoias						1	1
101300 - Commercial Art	Porterville	4						4
	Sequoias					1		1
103000 - Graphic Art and Design	Bakersfield	9				17		25
	Fresno City	6				6		11
	San Joaquin Delta	10				2		12
	Sequoias	2		3			10	15
11.0801 - Web Page, Digital/Multimedia and Information Resources Design	Institute of Technology		1					1
50.0409 - Graphic Design	ITT Technical Institute-Clovis	0						0
	ITT Technical Institute-Lathrop	0						0
TOTAL		32	1	3	1	26	11	74

There is an undersupply of 238 graphic art and design workers in the SCV/SML subregion and 395 workers in the region (Exhibit 12).

Exhibit 12. Graphic art and design workforce annual demand and supply in the SCV/SML subregion and region



Student Outcomes

Exhibit 13 summarizes employment and wage outcomes from the California Community College Chancellor's Cal-PASS Plus LaunchBoard for the TOP codes related to graphic art and design. There were 52 graphic art and design students who received a degree, certificate or attained apprenticeship journey status, and 78 transferred. A higher percentage of digital media students reported attaining a job closely related to their field of study and a median change in earnings. A higher percentage of graphic art and design students attained a living wage.

Exhibit 13. Regional metrics for the TOP codes related to graphic art and design

Metric	061400 - Digital Media	103000 - Graphic Art and Design
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	*	52
Number of Students Who Transferred	31	78
Job Closely Related to Field of Study	55%	43%
Median Change in Earnings	58%	39%
Attained a Living Wage	44%	53%
* denotes data not available.		

Conclusion

The entry-level wages of six of the seven occupations exceed the SCV/SML subregion's average living wage. The entry-level wages for art directors fall below the subregion's living wage, \$10.30/hour. There were 249 job postings in the past six months for occupations related to graphic art and design in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is communication, and the top specialized skill is graphic design.
- The top software skill is Adobe Photoshop.
- The top certification is a driver's license.

There is an undersupply of trained workers, a shortage of 238 in the SCV/SML subregion and 395 in the region.

Recommendation

Based on these findings, it is recommended that Taft College work with the ICT/DM Regional Director, the college's advisory board, and local industry in the development of programs to address the shortage of graphic art and design workers in the region.

Appendix A: Methodology & Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor’s Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry: economicmodeling.com .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Burning Glass: burning-glass.com/ .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org .

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state and local trends.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.