

September 2022

# Labor Market Analysis

## Digital Media Production



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Prepared by the Central Valley/Mother Lode Center of Excellence

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**COVID-19 Statement:** This report includes employment projection data by Lightcast. Lightcast’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.

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# 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 Digital Media Production. Five occupations related to Digital Media Production were identified for Modesto Junior College:

- 15-1255, Web and Digital Interface Designers
- 27-1014, Special Effects Artists and Animators
- 27-1024, Graphic Designers
- 43-9031, Desktop Publishers
- 51-9151, Photographic Process Workers and Processing Machine Operators

## Key findings:

- **Occupational demand** — Nearly 990 workers were employed in jobs related to Digital Media Production in 2021 in the North Central Valley/Northern Mother Lode (NCV/NML) subregion. The largest occupation is graphic designers with 610 workers, a projected growth rate of 0% over the next five years, and 59 annual openings.
- **Wages** — Special effects artists and animators earn the highest entry-level wage, \$24.30/hour in the subregion. There was no wage data available for desktop publishers.
- **Employers** — Employers with the most job postings in the subregion are Fortis Solutions Group, 511 Tactical, and Artistongo.
- **Occupational titles** — The most common occupational title in job postings in the subregion is Graphic Designers. The most common job title is Graphic Designer.
- **Skills and certifications** — The top baseline skill is creativity, the top specialized skill is graphic design, and the top software skill is Adobe Photoshop. The most in-demand certification is a certified teacher.
- **Education** — A high school diploma or equivalent is typically required for photographic process workers and processing machine operators. An associate degree is typically required for desktop publishers. A bachelor's degree is typically required for graphic designers, special effects artists and animators, and web and digital interface designers.
- **Supply** — Analysis of postsecondary completions shows that on average 3 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 95 trained workers in the subregion and 212 workers in the region. The Center of Excellence recommends that Modesto Junior College work with the regional directors, the college's advisory board, and local industry in the development of programs to address the shortage of Digital Media Production workers in the region.

# Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Modesto Junior College to provide labor market information for Digital Media Production. The geographical focus for this report is the North Central Valley/Northern Mother Lode (NCV/NML) 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 NCV/NML subregion is \$12.63/hour.<sup>1</sup> Analysis of the program and occupational data related to Digital Media Production resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 15-1255, Web and Digital Interface Designers
- 27-1014, Special Effects Artists and Animators
- 27-1024, Graphic Designers
- 43-9031, Desktop Publishers
- 51-9151, Photographic Process Workers and Processing Machine Operators

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.

## **Web and Digital Interface Designers**

**Job Description:** Design digital user interfaces or websites. Develop and test layouts, interfaces, functionality, and navigation menus to ensure compatibility and usability across browsers or devices. May use web framework applications as well as client-side code and processes. May evaluate web design following web and accessibility standards, and may analyze web use metrics and optimize websites for marketability and search engine ranking. May design and test interfaces that facilitate the human-computer interaction and maximize the usability of digital devices, websites, and software with a focus on aesthetics and design. May create graphics used in websites and manage website content and links.

**Knowledge:** N/A

**Skills:** N/A

## **Special Effects Artists and Animators**

**Job Description:** Create special effects or animations using film, video, computers, or other electronic tools and media for use in products, such as computer games, movies, music videos, and commercials.

**Knowledge:** Computer and Electronics, English Language, Design, Communication and Media, Customer and Personal Service

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

## **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, Communication and Media, English Language, Fine Art, Computers and Electronics

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

## **Desktop Publishers**

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

**Knowledge:** Computer and Electronics, Communication and Media, English Language

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

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<sup>1</sup> 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/>.

### **Photographic Process Workers and Processing Machine Operators**

**Job Description:** Perform work involved in developing and processing photographic images from film or digital media. May perform precision tasks such as editing photographic negatives and prints.

**Knowledge:** Customer and Personal Service, Computer and Electronics, Production and Processing, English Language

**Skills:** Operations Monitoring, Active Listening, Quality Control Analysis, Reading Comprehension, Service Orientation

## Occupational Demand

The NCV/NML subregion employed 979 workers in Digital Media Production occupations in 2021 (Exhibit 1). The largest occupation is graphic designers with 610 workers in 2021. This occupation is projected to grow by 0% over the next five years and has the greatest number of projected annual openings, 59.

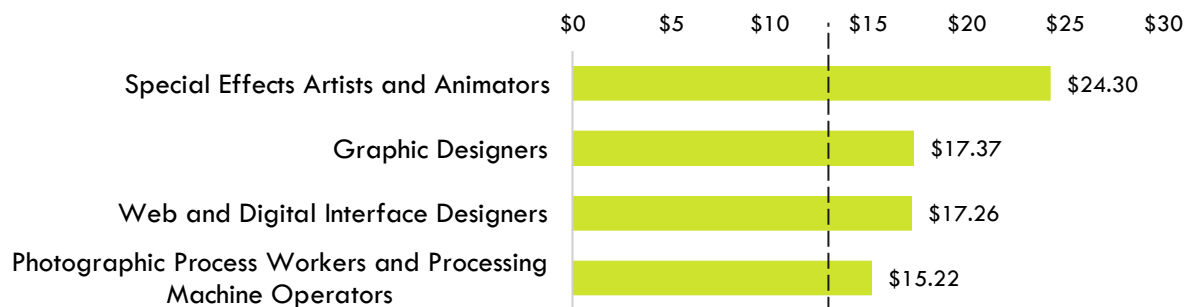
**Exhibit 1. Digital Media Production employment and occupational projections in the NCV/NML subregion**

Occupation	2021 Jobs	2026 Jobs	5-Year Change	5-Year % Change	Annual Openings
Graphic Designers	610	608	(2)	(0%)	59
Special Effects Artists and Animators	235	230	(5)	(2%)	25
Web and Digital Interface Designers	115	125	10	8%	11
Photographic Process Workers and Processing Machine Operators	11	10	(1)	(8%)	2
Desktop Publishers	<10	<10	Insf. Data	Insf. Data	1
<b>TOTAL</b>	<b>979</b>	<b>981</b>	<b>2</b>	<b>0%</b>	<b>97</b>

## Wages

Exhibit 2 shows the entry-level hourly wages of the Digital Media Production occupations. Special effects artists and animators earn the highest entry-level wage, \$24.30/hour in the subregion<sup>2</sup>. There was no wage data available for desktop publishers.

**Exhibit 2. Digital Media Production entry-level wages in the NCV/NML subregion**



Dotted line denotes \$12.63/hour living wage in the NCV/NML subregion

<sup>2</sup> Entry-level wages are derived from the 25<sup>th</sup> percentile.

# Job Postings

There were 65 job postings for the five occupations in the NCV/NML subregion from March 2022 to August 2022.<sup>3</sup> The employers with the most job postings are listed in Exhibit 3.

## Exhibit 3. Top employers of Digital Media Production by number of job postings

Employer	Job Postings	% Job Postings
Fortis Solutions Group	3	7%
5 11 Tactical	2	5%
Artistongo	2	5%
Harrah& X27 S Northern California	2	5%
Live Nation Worldwide	2	5%
Quad Graphics Incorporated	2	5%
5 11, Inc	1	2%
511 Group Incorporated	1	2%
Bbc Graphics	1	2%
Belkorp Ag	1	2%

Exhibit 4 shows how job postings for the targeted occupations in the NCV/NML subregion are distributed across three O\*NET OnLine occupations. The occupational title Graphic Designers is listed in 32 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include Graphic Designer in 13 job postings, Customer Order Specialist in six job postings, and Taking Photos in four job postings.

## Exhibit 4. Top occupational titles in job postings for Digital Media Production

Occupational Title	Job Postings	% of Job Postings
Graphic Designers	32	49%
Photographic Process Workers and Processing Machine Operators	31	48%
Multimedia Artists and Animators	2	3%

## Salaries

Exhibit 5 shows the “Market Salaries” for Digital Media Production occupations. These are calculated by Burning Glass using a machine learning model built off of millions of job postings every year. This accounts for adjustments based on locations, industry, skills, experience, education requirements, among other variables.

## Exhibit 5. Salaries for Digital Media Production occupations

Market Salary Percentile	Salary Amount
10th Percentile	\$28,741
25th Percentile	\$32,076
50th Percentile	\$34,912
75th Percentile	\$48,403
90th Percentile	\$61,906

<sup>3</sup> 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.

## Education

Of the 65 job postings, 32 listed an education level preferred for the positions being filled. Among those, 56% requested high school or vocational training, 50% requested a bachelor's degree, and 13% requested an associate degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below may total more than 100%.

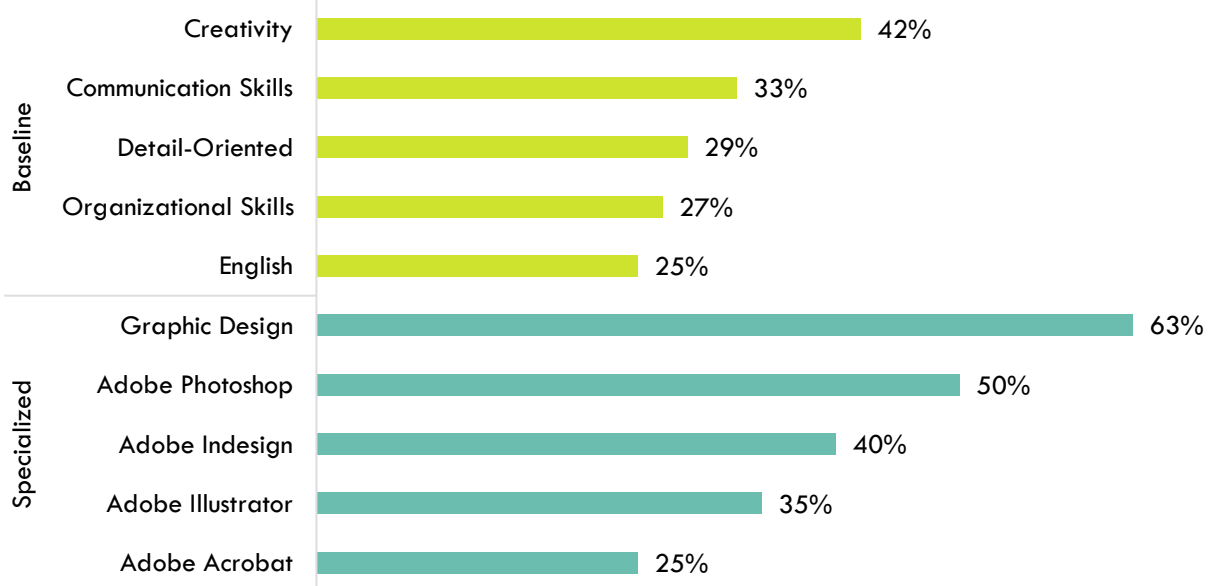
**Exhibit 6. Education levels requested in job postings for Digital Media Production**

Education Level	Job Postings	% of Job Postings
High school or vocational training	18	56%
Bachelor's degree	16	50%
Associate's degree	4	13%

## Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are creativity, 42% of job postings, communication skills, 33%, and detail-oriented, 29%. The top three specialized skills are graphic design, 63% of job postings, Adobe Photoshop, 50%, and Adobe Indesign, 40%.

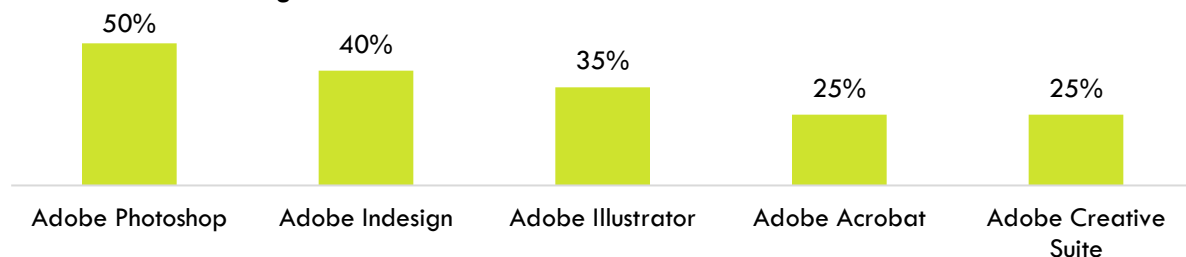
**Exhibit 7. In-demand Digital Media Production baseline and specialized skills**



## 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 Digital Media Production software skills**



## Certifications

Of the 65 job postings, 6 contained certification data. Among those, 17% indicated a need for a certified teacher. The next top certification is OSHA Forklift Certification (Exhibit 9). Please note 100% of job postings indicated a need for a driver's license, but it is not a certification. (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 Digital Media Production certifications requested in job postings**



## Education, Work Experience & Training

A high school diploma or equivalent is typically required for photographic process workers and processing machine operators. An associate degree is typically required for desktop publishers. A bachelor's degree is typically required for graphic designers, special effects artists and animators, and web and digital interface designers (Exhibit 10).

**Exhibit 10. Education, work experience, training, and Current Population Survey results for Digital Media Production occupations<sup>4</sup>**

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Graphic Designers	Bachelor's degree	None	None	26.5%
Special Effects Artists and Animators	Bachelor's degree	None	None	27.7%
Web and Digital Interface Designers	Bachelor's degree	None	None	23.4%
Photographic Process Workers and Processing Machine Operators	High school diploma or equivalent	None	Short-term	24.0%
Desktop Publishers	Associate's degree	None	Short-term	40.7%

<sup>4</sup> "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.



# Supply

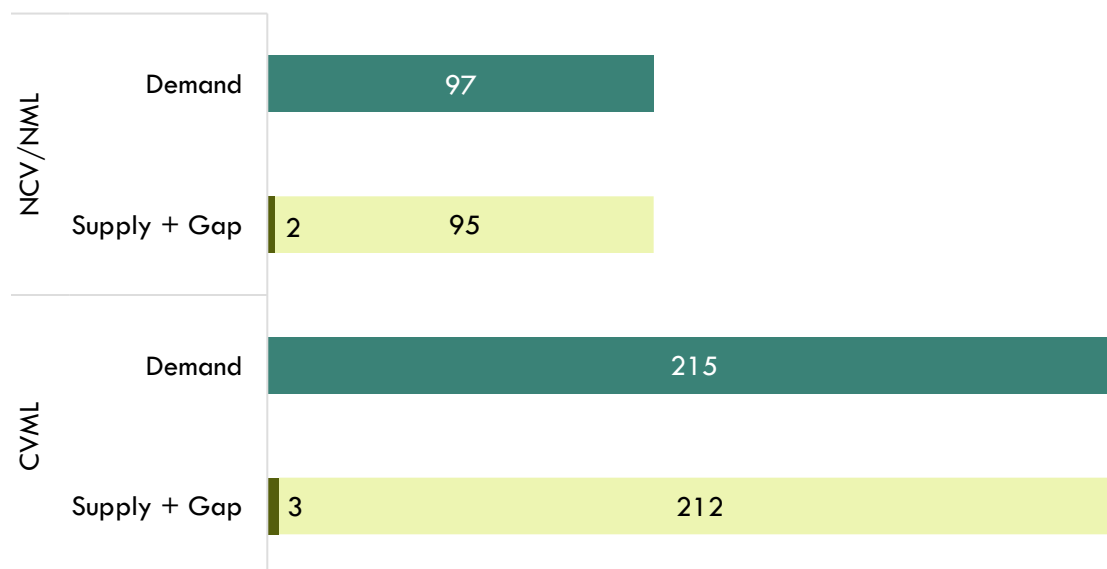
Analysis of program data from the Integrated Postsecondary Education Data System (IPEDS) included the TOP code and title: 061400 - Digital Media. Analysis of the last three years of data shows that, on average, 3 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

**Exhibit 11. Postsecondary supply for Digital Media Production occupations in the region**

TOP/CIP Code- Title	College	Associate Degree	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 6 < 18 Semester Units	Subtotal
061400 - Digital Media	Columbia	2	0	0		2
	Merced	0				0
	Sequoias				0	0
<b>TOTAL</b>		<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>

There is an undersupply of 95 Digital Media Production workers in the NCV/NML subregion and 212 workers in the region (Exhibit 12).

**Exhibit 12. Digital Media Production workforce demand (annual job openings), postsecondary supply of students (awards), and additional students needed to fill gap in the NCV/NML 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 code related to Digital Media Production. Of note, 41 students transferred; 46% of students obtained a job closely related to their field of study; 24% had a median change in earnings; and 57% of students attained a living wage.

**Exhibit 13. Regional metrics for the TOP code related to Digital Media Production**

Metric	Digital Media 061400
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	*
Number of Students Who Transferred	41
Job Closely Related to Field of Study	46%
Median Change in Earnings	24%
Attained a Living Wage	57%
* denotes data not available.	

## Conclusion

The entry-level wages of the five occupations exceed the NCV/NML subregion's average living wage. There were 65 job postings in the past six months for occupations related to Digital Media Production in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is creativity, and the top specialized skill is graphic design.
- The top software skill is Adobe Photoshop.
- The top certification is a certified teacher.

There is an undersupply of trained workers, a shortage of 95 in the NCV/NML subregion and 212 in the region.

## Recommendation

Based on these findings, it is recommended that Modesto Junior College work with the regional directors, the college's advisory board, and local industry in the development of programs to address the shortage of Digital Media Production 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. (Lightcast). Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast 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 Lightcast earnings by industry: <a href="http://economicmodeling.com">economicmodeling.com</a> .
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: <a href="https://www.bls.gov/emp/tables/educational-attainment.htm">https://www.bls.gov/emp/tables/educational-attainment.htm</a> .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: <a href="http://labormarketinfo.edd.ca.gov">labormarketinfo.edd.ca.gov</a> .
Job Posting and Skills Data	Burning Glass: <a href="http://burning-glass.com/">burning-glass.com/</a> .
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: <a href="http://onetonline.org">onetonline.org</a> .

## 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. (Lightcast) 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.