

Digital Media and Multimedia

Inland Empire/Desert Region (Riverside and San Bernardino counties combined)

Summary

- Employment for the digital media occupational group is expected to **increase by 3% between 2018 and 2023** in the Inland Empire/Desert Region. A total of **1,492 job openings** will be available over the five-year timeframe.
- The **median wages** for the digital media occupational group are **above the MIT Living Wage estimate of \$12.39 per hour** for a single adult living in the Inland Empire/Desert Region.
- **There appears to be an opportunity for program growth** because there are more annual job openings for the digital media occupational group (**298 average annual openings**) than annual credentials issued for the selected community college programs in the region (**58 average annual community college credentials**).

Introduction

This report provides data on the occupations related to the California Community College digital media (TOP 0614.00) and multimedia (TOP 0614.10) programs. Program descriptions are available on page 5 of this report. The occupations listed below are related to these training programs and are collectively referred to as the digital media occupational group.

- Desktop Publishers
- Graphic Designers
- Multimedia Artists and Animators
- Prepress Technicians and Workers

Job Opportunities

In 2018, there were 2,984 jobs in the digital media occupational group in the Inland Empire/Desert Region. This occupational group is projected to increase employment by 3% by 2023. Employers in the region will need to hire 1,492 workers over the next five years to fill new jobs and backfill jobs that workers are permanently vacating (includes occupational transfers and retirements). Exhibit 1 displays five-year projections for the digital media occupational group in the Inland Empire/Desert Region.

Exhibit 1: Five-year projections for the digital media occupational group

2018 Jobs	2023 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
2,984	3,082	3%	1,492	298	22%

Source: EMSI 2018.4

Earnings

The median wages for the digital media occupational group are above the MIT Living Wage estimate of \$12.39 per hour for a single adult living in the Inland Empire/Desert Region (Glasmeier, 2019).

Experienced-level wages are sufficient for two working adults and one child (\$14.75 per hour, per adult, or \$30,680 annually for each adult). Exhibit 2 displays wage information for the digital media occupational group in the Inland Empire/Desert Region.

Exhibit 2: Earnings for the digital media occupational group

Occupation	Entry to Experienced Hourly Wage Range*	Median Wage*	Average Annual Earnings
Desktop Publishers	\$18.27 to \$34.36	\$28.79	\$54,600
Graphic Designers	\$17.25 to \$23.88	\$19.66	\$45,000
Prepress Technicians and Workers	\$16.13 to \$22.59	\$18.28	\$42,400
Multimedia Artists and Animators	\$11.94 to \$20.73	\$14.15	\$35,900

Source: EMSI 2018.4

*Entry hourly is 25th percentile wage, the median is 50th percentile wage, and experienced is 75th percentile wage.

Job Postings, Employers, Skills, and Education

Exhibit 3 displays the number of job ads posted during the last 12 months along with the regional and statewide average time to fill for the digital media occupational group in the Inland Empire/Desert Region. On average, local employers fill online job postings for the digital media occupational group within 75 days. This regional average is 34 days longer than the statewide average, indicating that it is much harder for local employers to find qualified candidates.

Exhibit 3: Job ads and time to fill for the digital media occupational group, Apr 2018 – Mar 2019

Occupation	Job Ads	Regional Average Time to Fill (Days)	California Average Time to Fill (Days)
Graphic Designers	374	77	41
Multimedia Artists and Animators	16	45	41
Prepress Technicians and Workers	6	34	38
Desktop Publishers	1	77	41
Total	397	75	41

Source: Burning Glass – Labor Insights

Exhibit 4 displays the employers posting the most job ads for the digital media occupational group during the last 12 months in the Inland Empire/Desert Region.

Exhibit 4: Employers posting the most job ads for the digital media occupational group, Apr 2018 – Mar 2019

Occupation	Employers
Graphic Designers (n=288)	<ul style="list-style-type: none"> California State University, San Bernardino Esri
Multimedia Artists and Animators (n=14)	<ul style="list-style-type: none"> Media Zoo DK Global, Inc.
Prepress Technicians and Workers (n=3)	<ul style="list-style-type: none"> Moon International, Inc. City of Riverside
Desktop Publishers (n=1)	<ul style="list-style-type: none"> Edison International

Source: Burning Glass – Labor Insights

Exhibit 5 displays a sample of specialized, employability, and software and programming skills that employers are seeking when looking for workers to fill positions in the digital media occupational group. Specialized skills are occupation-specific skills that employers are requesting for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is commonly referred to as “soft skills.” The skills requested in job postings may be utilized as a

helpful guide for curriculum development. There were too few postings for desktop publishers to yield reliable skills information.

Exhibit 5: Sample of in-demand skills from employer job ads for the digital media occupational group, Apr 2018 – Mar 2019

Occupation	Specialized Skills	Employability Skills	Software and Programming Skills
Graphic Designers (n=346)	<ul style="list-style-type: none"> • Social Media • Typesetting • Web Site Design 	<ul style="list-style-type: none"> • Creativity • Detail-Oriented • Communication Skills 	<ul style="list-style-type: none"> • Adobe Creative Suite* • Microsoft Office • HTML 5
Multimedia Artists and Animators (n=16)	<ul style="list-style-type: none"> • Motion Graphics • 3D Modeling/Design • Character Design 	<ul style="list-style-type: none"> • Creativity • Organizational Skills • Teamwork/Collaboration 	<ul style="list-style-type: none"> • Adobe Creative Suite* • Cinema 4D • 3D Studio Max
Prepress Technicians and Workers (n=6)	<ul style="list-style-type: none"> • Drawing Preparation • Rough Sketches • Project Design 	<ul style="list-style-type: none"> • Creativity • Detail-Oriented • Research 	<ul style="list-style-type: none"> • Word Processing • Adobe Creative Suite* • Microsoft Office
Desktop Publishers	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • N/A

Source: Burning Glass – Labor Insights

*Adobe Creative Suite contains Adobe Photoshop, InDesign, Illustrator, Acrobat, as well as others and is widely considered to be the industry standard for graphic design.

Exhibit 6 displays the work experience and entry-level education typically required to enter each occupation according to the Bureau of Labor Statistics (BLS), educational attainment for incumbent workers with “some college, no degree” and an “associate degree” according to the U.S. Census (2016-17), and the minimum advertised education requirement from employer job ads. There were too few postings for prepress technicians and workers and desktop publishers to yield reliable education information.

Exhibit 6: Work experience, typical entry-level education, educational attainment, and minimum advertised education requirements for the digital media occupational group, Apr 2018 – Mar 2019

Occupation	Typical Entry-Level Education Requirement	Educational Attainment*	Minimum Advertised Education Requirement from Job Ads			
			Number of Job Ads (n=)	High school diploma or vocational training	Associate degree	Bachelor's degree or higher
Graphic Designers	Bachelor's degree	29%	188	16%	12%	72%
Multimedia Artists and Animators	Bachelor's degree	28%	4	-	-	100%
Prepress Technicians and Workers	Postsecondary nondegree award	39%	1	N/A	N/A	N/A
Desktop Publishers	Associate degree	42%	1	N/A	N/A	N/A

Source: EMSI 2018.4, Burning Glass – Labor Insights

*Percentage of incumbent workers with a Community College Credential or Some Postsecondary Coursework

Student Completions and Program Outcomes

This section contains completion and outcome data for the California Community College digital media (TOP 0614.00) and multimedia (TOP 0614.10) programs. Exhibits 7 & 9 display the average annual regional California Community College (CCC) credentials conferred during the three academic years between 2014 and 2017, from the California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, along with the headcount from the most recent year available on LaunchBoard. Credentials are the combined total of associate degrees and certificates issued during the timeframe, divided by three in this case in order to calculate an annual average. This is done to minimize the effect of atypical variation that might be present in a single year. Headcount is the unduplicated number of students who enrolled in one or more courses in the program. The relevant TOP code is from the Taxonomy of Programs manual, and the corresponding program titles used at each college (in *italics*) is sourced from the Chancellor's Office Curriculum Inventory (COCI). Please note, a credential is not always equal to a single person in search of a job opening since a student may earn more than one credential, such as an associate degree in addition to a certificate.

Community college student outcome information is from LaunchBoard and based on the selected TOP code and region. These metrics are based on records submitted to the California Community Colleges Chancellor's Office Management Information Systems (MIS) by community colleges, which comes from self-



reported student information from CCC Apply and the National Student Clearinghouse. Employment and earnings metrics are sourced from records provided by California’s Employment Development Department’s Unemployment Insurance database. When available, outcomes for completers are reported in order to demonstrate the impact that earning a degree or certificate can have on employment and earnings. For more information on the types of students included for each metric, please see the web link for LaunchBoard’s Strong Workforce Program Metrics Data Element Dictionary in the References section (LaunchBoard, 2019a). Finally, employment in a job closely related to the field of study comes from self-reported student responses on the CTE Employment Outcomes Survey (CTEOS), administered by Santa Rosa Junior College (LaunchBoard, 2017). Data from the latest academic year for each metric is provided in Exhibits 8 & 10.

Program descriptions are sourced from the California Community Colleges Taxonomy of Programs. Descriptions for the programs included in this report are the following:

Digital Media (TOP 0614.00): A broad range of programs that combine computer and other electronic technologies with skills and techniques from various fine arts and communications disciplines.

Exhibit 7: Annual average community college credentials and headcount for the digital media program in the Inland Empire/Desert Region

0614.00 – Digital Media	CCC Headcount, Academic Year 2016-17	CCC Annual Average Credentials, Academic Years 2014-17
Chaffey	18	
Copper Mountain	-	
Mt. San Jacinto – Digital Media	427	
Associate Degree		1
Certificate 30 to < 60 semester units		1
Norco	11	
Palo Verde		
Certificate 6 to < 18 semester units		4
Riverside – Applied Digital Media and Printing	358	
Associate Degree		7
Certificate 30 to < 60 semester units		7
Total CCC Headcount, Academic Year 2016-17	817	
Total Annual Average CCC Credentials, Academic Years 2014-17		21

Source: LaunchBoard, MIS Data Mart, COCI

Exhibit 8: Digital media strong workforce program outcomes

Strong Workforce Program Metrics: 0614.00 – Digital Media Academic Year 2015-16, unless noted otherwise	Inland Empire/Desert Region	California Median
Course enrollments (2016-17)	1,229	147
Completed 12+ units in one year (2016-17)	118	36
Economically disadvantaged students* (2016-17)	78%	67%
Transferred to a 4-year institution	26	19
Employed in the 4 th fiscal quarter after exit (all exiters)	57%	61%
Median annual earnings* (all exiters)	\$14,879	\$18,630
Job closely related to the field of study (2014-15)	N/A	63%
Median change in earnings (all exiters)	99%	51%
Attained a living wage (completers and skills-builders)	N/A	38%

Source: LaunchBoard

*Data for these metrics is available in Community College Pipeline. All others are available in Strong Program Workforce Metrics.

Multimedia (TOP 0614.10): Principles and techniques of using computers to bring together text, sounds, animation, graphic art, and video to create interactive products to inform, educate, or entertain.

Exhibit 9: Annual average community college credentials and headcount for the multimedia program in the Inland Empire/Desert Region

0614.10 – Multimedia	CCC Headcount, Academic Year 2016-17	CCC Annual Average Credentials, Academic Years 2014-17
Chaffey – Design for Multimedia	96	
Associate Degree		2
Certificate 30 to < 60 semester units		1
Moreno Valley		
Associate Degree		2
Certificate 30 to < 60 semester units		4
Mt. San Jacinto	42	
Associate Degree		10
Certificate 30 to < 60 semester units		7
Norco	42	
Associate Degree		4
Certificate 30 to < 60 semester units		4
San Bernardino		
Certificate 18 to < 30 semester units		2
Total CCC Headcount, Academic Year 2016-17	180	
Total Annual Average CCC Credentials, Academic Years 2014-17		37

Source: LaunchBoard, MIS Data Mart, COCI

Exhibit 10: Multimedia strong workforce program outcomes

Strong Workforce Program Metrics: 0614.10 – Multimedia Academic Year 2015-16, unless noted otherwise	Inland Empire/Desert Region	California Median
Course enrollments (2016-17)	181	75
Completed 12+ units in one year (2016-17)	41	27
Economically disadvantaged students* (2016-17)	72%	52%
Transferred to a 4-year institution	26	10
Employed in the 4 th fiscal quarter after exit (all exiters)	52%	62%
Median annual earnings* (all exiters)	\$13,893	\$17,179
Job closely related to the field of study (2014-15)	N/A	100%
Median change in earnings (all exiters)	78%	68%
Attained a living wage (completers and skills-builders)	24%	45%

Source: LaunchBoard

*Data for these metrics is available in Community College Pipeline. All others are available in Strong Program Workforce Metrics.

References

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Appendix: Occupation definitions, sample job titles, five-year projections for digital media occupations

Occupation Definitions (SOC code), Education and Training Requirement, Community College Educational Attainment

Multimedia Artists and Animators (27-1014)

Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials.

Sample job titles: 3D Animator, 3D Artist, Animation Director, Animator, Art Director, Artist, Creative Director, Graphic Artist, Graphic Designer, Illustrator

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 28%

Graphic Designers (27-1024)

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.

Sample job titles: Artist, Creative Director, Creative Manager, Design Director, Designer, Graphic Artist, Graphic Designer, Online Producer, Production Artist, Publications Designer

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 29%

Desktop Publishers (43-9031)

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

Sample job titles: Advertising Associate, Art Director, Computer Typesetter, Creative Director, Desktop Publishing Specialist, Electronic Console Display Operator, Electronic Imager, Graphic Artist, Mac Operator, Production Manager

Entry-Level Educational Requirement: Associate degree

Training Requirement: Less than one month on-the-job training

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 42%



Prepress Technicians and Workers (51-5111)

Format and proof text and images submitted by designers and clients into finished pages that can be printed. Includes digital and photo typesetting. May produce printing plates.

Sample job titles: Desktop Operator, Electronic Prepress Operator (EPP Operator), Electronic Prepress Technician (EPP Tech), Plate Maker, Plate Mounter, Pre-Press Proofer, Prepress Operator, Prepress Specialist, Prepress Stripper, Prepress Technician

Entry-Level Educational Requirement: Postsecondary nondegree award

Training Requirement: None

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 39%



Table 1: 2018 to 2023 job growth, wages, education, training, and work experience required for the digital media occupational group, Inland Empire/Desert Region

Occupation (SOC)	2018 Jobs	5-Yr Change	5-Yr % Change	Annual Openings (New + Replacement Jobs)	Entry-Experienced Hourly Wage*	Median Hourly Wage*	Average Annual Earnings	Typical Entry-Level Education & On-The-Job Training Required	Work Experience Required
Graphic Designers (27-1024)	2,527	85	3%	254	\$17.25 to \$23.88	\$19.66	\$45,000	Bachelor's degree & none	None
Multimedia Artists and Animators (27-1014)	296	12	4%	26	\$11.94 to \$20.73	\$14.15	\$35,900	Bachelor's degree & none	None
Prepress Technicians and Workers (51-5111)	104	(2)	(2%)	12	\$16.13 to \$22.59	\$18.28	\$42,400	Postsecondary nondegree award & none	None
Desktop Publishers (43-9031)	58	1	2%	7	\$18.27 to \$34.36	\$28.79	\$54,600	Associate degree & less than 1 month	None
Total	2,984	98	3%	298	-	-	-	-	-

Source: EMSI 2018.4

*Entry Hourly is 25th percentile wage, the median is 50th percentile wage, experienced is 75th percentile wage.