



Labor Market Analysis: 0612.20 – Film Production

Virtual Production in Cinema – Associate of Science for Transfer (A.S.-T) degree; Associate of Science (A.S.) degree; Certificate requiring 16 to fewer than 30 semester units

Los Angeles Center of Excellence, June 2025

Program Endorsement:	Endorsed: All Criteria Met <input type="checkbox"/>	Endorsed: Some Criteria Met <input checked="" type="checkbox"/>	Not Endorsed <input type="checkbox"/>
Program Endorsement Criteria			
Supply Gap:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/> (See below)	
Living Wage: (Entry-Level, 25th)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Education:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Emerging Occupation(s)			
	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

SUMMARY

This report analyzes whether local labor market demand is being met by community college programs aligned with the identified middle-skill occupations¹ or whether a shortage of workers exists. Labor market demand is measured by annual job openings while education supply is measured by the number of awards (degrees and certificates) conferred on average each year.

Based on the available data, there does not appear to be a supply gap for the occupations of interest. However, the talent oversupply is with the COE's acceptable margin (the number of awards issued is 25% over or under the number of annual openings) and is therefore considered "supply met" rather than a "supply gap." While this program does not meet the traditional supply/demand endorsement criteria, there may be demand for these workers from local employers that is not reflected in traditional labor market data. For this reason, real-time labor market data is included in this report as well – to provide a more nuanced view of the regional job market for these middle-skill media arts occupations. Furthermore, entry-level wages exceed the self-sufficiency standard wage in both Los Angeles and Orange counties, and more than one-third of current workers in the field have completed some college, an associate degree, or less educational attainment.

¹ Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree. The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

Recommendation: Due to two of the three program endorsement criteria being met, the Los Angeles Center of Excellence for Labor Market Research (LA COE) endorses this proposed program.

Key Findings

Supply Gap

- 2,556 annual job openings are projected in the region through 2028. This number is less than the three-year average of 3,239 awards conferred by educational institutions in the region.
 - Although there are more awards conferred than job openings, the data suggests that the **demand has been met for these occupations within the LA/OC region** since the three-year average number of awards (supply) is within the COE's 25% margin of annual job openings (demand).
 - Since the *video game designer* (15-1255.01) occupation is emerging, job openings data is not included in the traditional labor market demand data within this report. It is likely that there is demand for this emerging occupation that is not currently included in the traditional demand data.
 - Over the past 12 months, there were **2,749 online job postings related to these four standard and emerging media arts occupations**. The highest number of job postings were for videographers, video editors, videographers/editors, game masters, and gameplay engineers.

Living Wage

- 77% of annual job openings for these middle-skill media arts occupations have entry-level wages **above** Los Angeles County's self-sufficiency standard hourly wage (\$24.03/hour).²

Educational Attainment

- A bachelor's degree is the typical entry-level education for the target occupations in this report, according to the Bureau of Labor Statistics (BLS).
- 34%-43% of workers in the field have completed some college, an associate degree, or less educational attainment, according to national educational attainment data.

Community college supply

- 22 community colleges issued awards related to media arts and/or virtual production in the greater LA/OC region.
- 1,193 awards (degrees and certificates) were conferred on average each year between 2022 and 2024.

Other postsecondary supply

- 25 educational institutions in the LA/OC region have conferred awards in programs related to media arts and/or virtual production over the past three years.
- 2,046 awards were conferred on average each year by other postsecondary institutions throughout the greater LA/OC region between 2021 and 2023.

² Center for Women's Welfare, University of Washington. (2024). *The self-sufficiency standard for California 2024*. <http://selfsufficiencystandard.org/California>.

TARGET OCCUPATIONS

LA COE prepared this report to provide regional labor market demand and postsecondary supply data related to three middle-skill occupations and one emerging occupation. Although the occupations in this report typically require a bachelor’s degree, they are considered middle-skill because approximately one-third of workers in the field have completed some college or an associate degree. [For full occupation descriptions, please see Appendix.](#)

- **Special Effects Artists and Animators (27-1014)**³
- **Camera Operators, Television, Video, and Film (27-4031)**⁴
- **Film and Video Editors (27-4032)**⁵
- **Video Game Designers (15-1255.01)**⁶

OCCUPATIONAL DEMAND

Exhibit 1 shows the five-year occupational demand projections for these middle-skill media arts occupations. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to decrease by 2% through 2028. However, there will be more than 2,500 job openings per year through 2028 due to retirements and workers leaving the field. The majority of jobs in 2023 for these middle-skill media arts occupations (92%) were located in Los Angeles County.

Exhibit 1: Current employment and occupational demand, Los Angeles and Orange counties⁷

Geography	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	Annual Openings
Los Angeles	25,417	24,853	(564)	(2%)	2,345
Orange	2,165	2,187	22	1%	211
Total	27,582	27,040	(542)	(2%)	2,556

Detailed Occupation Data

Exhibit 2 displays the current employment and projected occupational demand for each of the target occupations in Los Angeles County. Positive scores for automation resilience⁸ reflect a lower-than-average threat of the occupation(s) being replaced by automation, while negative scores reflect a greater-than-average risk of automation. The average percentage of workers aged 55+ across all occupations in the Los Angeles/Orange County region is 26%; occupations with a larger share of workers aged 55 and older typically have greater replacement needs to offset the amount of impending retirements. On average, 81% of workers across all occupations in California are employed full-time.

³ [Special Effects Artists and Animators \(bls.gov\)](https://www.bls.gov)

⁴ [Film and Video Editors and Camera Operators \(bls.gov\)](https://www.bls.gov)

⁵ [Ibid.](#)

⁶ [Video Game Designers \(onetonline.org\)](https://www.onetonline.org)

⁷ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

⁸ Automation risk is calculated based on the percentage of time spent on high-risk compared to low-risk work, the number of high-risk jobs in compatible occupations, and the overall industry automation risk.

Exhibit 2: Detailed employment and occupational demand, Los Angeles County⁹

Occupation	2023 Jobs	2028 Jobs	5-Yr % Change	Annual Openings	Automation Resilience	% Aged 55 and older	% Full Time Workers
Special Effects Artists and Animators	9,979	9,465	(5%)	935	27.8	27%	Data unavail.
Camera Operators, Television, Video, and Film	5,736	5,822	1%	544	0.8	20%	82%
Film and Video Editors	9,702	9,566	(1%)	867	5.9	21%	82%
Total	25,417	24,853	(2%)	2,345	-	-	-

WAGES

The labor market endorsement in this report considers the entry-level hourly wages for these middle-skill media arts occupations in Los Angeles County as they relate to the county's self-sufficiency standard wage. Orange County wages are included below in order to provide a complete analysis of the greater Los Angeles/Orange County region.

Los Angeles County

The majority, 77%, of annual openings for middle-skill media arts occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$24.03 in Los Angeles County). Typical entry-level hourly wages are in a range between \$21.78 and \$39.14. (Exhibit 3).

Two occupations have entry-level wages above the self-sufficiency standard wage:

- *Special effects artists and animators*, \$39.14
- *Film and video editors*, \$27.03

Experienced workers can expect to earn wages between \$47.84 and \$78.36, which are higher than the self-sufficiency standard.

Exhibit 3: Earnings for occupations in Los Angeles County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Special Effects Artists and Animators	\$39.14	\$59.27	\$78.36	\$123,300
Camera Operators, Television, Video, and Film	\$21.78	\$31.50	\$47.84	\$65,500
Film and Video Editors	\$27.03	\$38.11	\$61.59	\$79,300

*Rounded to the nearest \$100

⁹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Orange County

The majority, 53%, of annual openings for middle-skill media arts occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$27.13 in Orange County). Typical entry-level hourly wages are in a range between \$18.52 and \$32.79 (Exhibit 4).

One occupation has entry-level wages above the self-sufficiency standard wage:

- *Special effects artists and animators*, \$32.79

Experienced workers can expect to earn wages between \$44.77 and \$70.93, which are higher than the self-sufficiency standard.

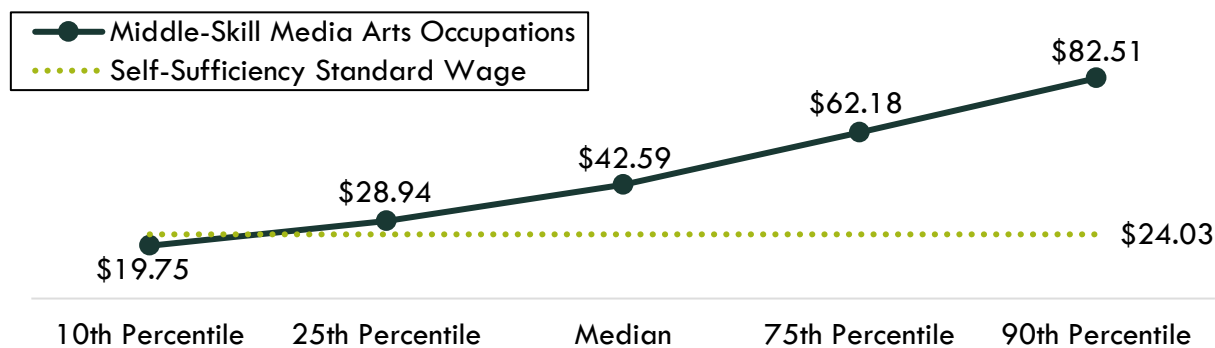
Exhibit 4: Earnings for occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Special Effects Artists and Animators	\$32.79	\$51.99	\$70.93	\$108,100
Camera Operators, Television, Video, and Film	\$18.52	\$28.41	\$44.77	\$59,100
Film and Video Editors	\$22.83	\$33.96	\$56.23	\$70,600

*Rounded to the nearest \$100

Across the greater Los Angeles and Orange County region, the average entry-level hourly earnings for the occupations in this report are \$28.94; this is above the living wage for one single adult in Los Angeles County (\$24.03). Exhibit 5 shows the average hourly wage for the occupations in this report, for entry-level to experienced workers.

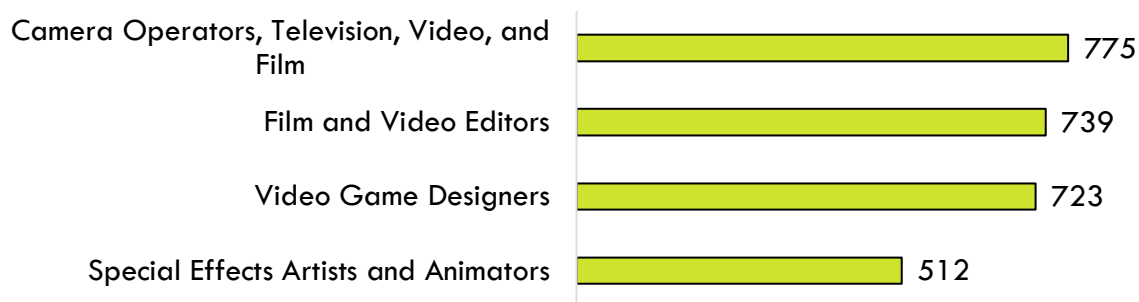
Exhibit 5: Average hourly earnings for middle-skill media arts occupations, Los Angeles and Orange counties



JOB POSTINGS BY OCCUPATION

There were 2,749 online job postings related to middle-skill media arts occupations listed in the past 12 months in Los Angeles and Orange counties. Exhibit 6 displays the number of job postings by occupation. The majority of job postings (28%) were for *camera operators, television, video, and film*, followed by *film and video editors* (27%) and *video game designers* (26%).

Exhibit 6: Job postings by occupation (last 12 months), Los Angeles and Orange counties



Job postings were analyzed for the most common job titles, skills, and employers associated with the target occupations in this report (Exhibit 7).

Exhibit 7: Most commonly requested job titles, skills and employers in job postings, Los Angeles and Orange counties

Top Job Titles	Top Skills	Top Employers
<ul style="list-style-type: none"> Videographers Video editors Videographers/editors Game masters Gameplay engineers Game designers 	<ul style="list-style-type: none"> Adobe Premiere Pro Adobe Photoshop Animations Marketing Adobe After Effects Workflow management 	<ul style="list-style-type: none"> Canteen Vending Riot Games Tiktok Netflix Sony Interactive Entertainment

In the greater Los Angeles/Orange County region, 18% of the middle-skill media arts job postings listed a minimum educational requirement. Exhibit 8 details the number and percentage of job postings by educational level.

Exhibit 8: Education levels requested in job postings for middle-skill occupations related to media arts, Los Angeles and Orange counties

Education Level	Job Postings	% of Job Postings
Bachelor's degree	420	84%
Associate degree	23	5%
High school diploma or vocational training	58	12%

JOB POSTINGS BY SKILL – Virtual Production

There were 127 job postings in the past 12 months that specifically listed “virtual production” as a specialized skill in the Los Angeles/Orange County region. Exhibit 9 shows the most common job titles, skills, and employers associated with the skill of “virtual production.”

Exhibit 9: Most commonly requested job titles, skills and employers in job postings, Los Angeles and Orange counties

Top Job Titles	Top Skills	Top Employers
<ul style="list-style-type: none"> Executive producers Pipeline engineers Capture managers Commissioning technicians Digital operations specialists Multimedia designers 	<ul style="list-style-type: none"> Virtual production Workflow management Visual effects Post-production Content creation Motion capture Animations 	<ul style="list-style-type: none"> Scanline VFX Virtual Producer Agency eg+ Worldwide Disguise Technologies Limited Pixomondo USC

In the greater Los Angeles/Orange County region, 35% of the virtual production-related job postings listed a minimum educational requirement. Exhibit 10 details the number and percentage of job postings by educational level.

Exhibit 10: Education levels requested in job postings for middle-skill occupations related to media arts, Los Angeles and Orange counties

Education Level	Job Postings	% of Job Postings
Bachelor's degree	35	80%
Associate degree	6	14%
High school diploma or vocational training	3	7%

EDUCATIONAL ATTAINMENT

The Bureau of Labor Statistics (BLS) lists a bachelor's degree as the typical entry-level education for all three occupations in this report (Exhibit 11). However, the national-level educational attainment data indicates between 34% and 43% of workers in the field have completed an associate degree, some college, or less education. The BLS lists the following typical entry-level education levels for the occupations in this report:

Exhibit 11: Entry-level education preferred by employers nationally, Bureau of Labor Statistics

Occupation	Education Level
Special Effects Artists and Animators	Bachelor's degree
Camera Operators, Television, Video, and Film	Bachelor's degree
Film and Video Editors	Bachelor's degree

EDUCATIONAL SUPPLY

Community College Supply

Exhibit 12 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for the occupations of interest. The colleges with the most completions in the region are Santa Monica, LA City, and Saddleback.

Exhibit 12: Regional community college awards (certificates and degrees), 2022-2024

TOP Code	Program	College	2021-22 Awards	2022-23 Awards	2023-24 Awards	3-Year Average
0604.00	Radio and Television	LA Valley	9	15	10	11
		Long Beach	7	9	14	10
		Mt San Antonio	-	1	-	0
		Santa Monica	8	5	16	10
		LA Subtotal	24	30	40	31
		Fullerton	1	1	2	1
		Saddleback	144	112	97	118
		OC Subtotal	145	113	99	119
Supply Subtotal/Average			169	143	139	150
0604.20	Television (including combined TV/film/video)	Cerritos	13	11	11	12
		Citrus	-	-	5	2
		El Camino	32	25	36	31
		Glendale	25	27	23	25
		LA City	35	30	46	37
		LA Mission	-	1	3	1
		LA Pierce	31	31	28	30
		LA Valley	48	38	31	39
		Long Beach	49	43	65	52
		Mt San Antonio	50	78	57	62
		Pasadena	51	37	59	49
		Rio Hondo	-	-	4	1
		LA Subtotal	334	321	368	341
		Cypress	20	21	26	22
		Fullerton	55	54	53	54
		Orange Coast	46	38	52	45
		Saddleback	15	25	32	24
		Santa Ana	13	17	15	15
		OC Subtotal	149	155	178	161
Supply Subtotal/Average			483	476	546	502
0612.20	Film Production	Cerritos	22	16	5	14

TOP Code	Program	College	2021-22 Awards	2022-23 Awards	2023-24 Awards	3-Year Average
		LA City	116	107	99	107
		LA Valley	54	44	74	57
		Long Beach	-	3	3	2
		Santa Monica	45	55	120	73
		West LA	10	36	32	26
		LA Subtotal	247	261	333	280
		Orange Coast	32	29	41	34
		Saddleback	-	1	-	0
		OC Subtotal	32	30	41	34
Supply Subtotal/Average			279	291	374	315
0614.20	Electronic Game Design	LA City	-	-	7	2
		Long Beach	-	2	2	1
		Pasadena	5	4	18	9
		LA Subtotal	5	6	27	13
		Irvine	-	24	9	11
		OC Subtotal	-	24	9	11
Supply Subtotal/Average			5	30	36	24
0614.40	Animation	Cerritos	7	13	11	10
		East LA	17	6	4	9
		El Camino	4	2	1	2
		Glendale	6	5	3	5
		LA City	2	2	7	4
		LA Mission	11	12	4	9
		Long Beach	-	1	-	0
		Mt San Antonio	26	40	61	42
		Pasadena	12	21	20	18
		Rio Hondo	10	17	8	12
		Santa Monica	103	37	107	82
		LA Subtotal	198	156	226	193
		Coastline	1	2	6	3
		Irvine	2	3	2	2
		Orange Coast	-	8	5	4
OC Subtotal	3	13	13	10		
Supply Subtotal/Average			201	169	239	203
Supply Total/Average			1,137	1,109	1,334	1,193

Exhibit 13 displays the community college awards issued broken down by award type. In this case, the majority of awards issued are degrees (61%) and certificates of achievement (38%).

Exhibit 13: Regional community college awards (certificates and degrees), 2022-2024

Award Type	# of Awards	% of Awards
A.A./A.S. degrees	724	61%
Certificates	459	38%
Noncredit awards	10	1%
	1,193	100%

Virtual Production Programs

There are eight community colleges in California that currently offer virtual production-focused programs, and two of these programs are located in the Los Angeles microregion. Exhibit 14 displays the current virtual production programs offered at California community colleges. The first program was created at Laney college in August 2022.

Exhibit 14: Virtual production community college programs

TOP Code/ Program	Program	College	Region	Award Type	Approved Date
0612.20/ Film Production	Virtual Production	Laney	Bay	Certificate	August 2022
0614.10/ Multimedia	Virtual Production Fundamentals	Ohlone	Bay	Certificate	May 2023
0614.60/ Computer Graphics and Digital Imagery	Advanced Virtual Production	Berkeley City	Bay	Certificate	February 2024
0699.00/ Other Media and Communications	Virtual Production Fundamentals	Berkeley City	Bay	Certificate	August 2023
		Diablo Valley	Bay	Certificate	June 2023
		Mission	Bay	Certificate	June 2023
		Santa Rosa	Bay	Certificate	June 2023
0612.20/ Film Production	Media Arts: Virtual Production, Motion Capture, and Advanced Visual Effects	L.A. Valley	LA	A.A. degree & Certificate	July 2024
0612.20/ Film Production	Virtual Production	West L.A.	LA	Certificate	Not listed

Other Postsecondary Supply

For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for middle-skill media arts occupations. Exhibit 15 shows the number of awards conferred by these institutions in relevant programs. Due to different data collection periods, the most recent data is from 2021 to 2023. Between 2021 and 2023, other postsecondary college institutions in the region conferred an average of 2,066 bachelor's and sub-baccalaureate awards. Sub-baccalaureate awards include associate degrees, postsecondary awards, and other academic awards that typically take fewer than four years to complete. Of the awards in Exhibit 14, the majority (91%) are bachelor's degrees (1,854 awards), followed by sub-baccalaureate awards (192 awards).

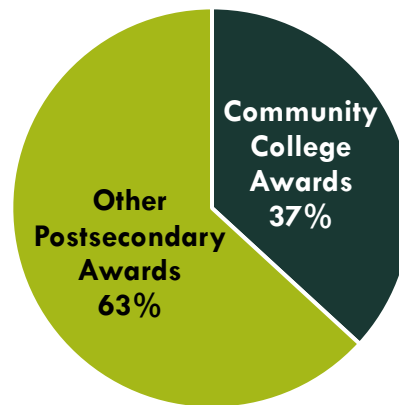
Exhibit 15: Other regional postsecondary awards, 2021-2023

CIP Code	Program	Postsecondary Institution	2020-21 Awards	2021-22 Awards	2022-23 Awards	3-Year Average
09.0701	Radio and Television	CSU-Fullerton	177	146	147	157
		CSU-Long Beach	-	-	-	-
		CSU-Los Angeles	145	108	171	141
		CSU-Northridge	426	469	430	442
		Loyola Marymount University	1	-	-	0
		Pepperdine Univ.	11	6	3	7
		Univ. of La Verne	11	8	10	10
10.0304	Animation, Interactive Technology, Video Graphics, and Special Effects	ABC Adult School	1	1	-	1
		Art Center College of Design	41	62	79	61
		Azusa Pacific Univ.	-	14	12	9
		CA College of ASU	11	2	12	8
		CA Institute of the Arts	37	54	35	42
		Chapman University	22	23	45	30
		Laguna College of Art and Design	25	29	26	27
		LA Film School	35	67	85	62
		Loyola Marymount University	26	13	14	18
		NY Film Academy	10	15	4	10
		Woodbury Univ.	-	-	24	8
50.0411	Game and Interactive Media Design	Azusa Pacific Univ.	-	-	5	2
		Biola University	-	4	3	2
		Chapman University	-	3	-	1
		Gnomon	-	-	31	10

CIP Code	Program	Postsecondary Institution	2020-21 Awards	2021-22 Awards	2022-23 Awards	3-Year Average
		Laguna College of Art and Design	44	26	30	33
		NY Film Academy	6	2	11	6
		USC	24	26	19	23
		Woodbury Univ.	7	10	19	12
50.0602	Cinematography and Film/Video Production	Art Center College of Design	24	28	19	24
		Azusa Pacific Univ.	-	4	10	5
		Biola University	54	75	88	72
		CA College of ASU	105	89	-	65
		CA Institute of the Arts	11	8	14	11
		CSU-Dominguez Hills	-	12	14	9
		Chapman University	100	201	159	153
		Fashion Institute of Design & Merch.	10	13	3	9
		LA Film School	255	177	157	196
		Loyola Marymount University	64	56	88	69
		Mount Saint Mary's University	14	13	4	10
		NY Film Academy	181	179	208	189
		USC	93	95	93	94
		Woodbury Univ.	17	25	14	19
Supply Total/Average			1,988	2,063	2,086	2,046

Exhibit 16 shows the proportion of community college awards conferred in the greater Los Angeles/Orange County region compared to the number of other postsecondary awards for the programs in this report. The majority of awards conferred in these programs are awarded by other institutions in the greater Los Angeles/Orange County region.

Exhibit 16: Percentage of community college awards compared to other postsecondary institution awards in the Los Angeles/Orange County region



APPENDIX: OCCUPATION DESCRIPTIONS

LA COE prepared this report to provide regional labor market supply and demand data related to these target and emerging occupations:

- **Special Effects Artists and Animators (27-1014)** 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.¹⁰
- **Camera Operators, Television, Video, and Film (27-4031)** Operate television, video, or film camera to record images or scenes for television, video, or film productions.¹¹
- **Film and Video Editors (27-4032)** Edit moving images on film, video, or other media. May work with a producer or director to organize images for final production. May edit or synchronize soundtracks with images.¹²
- **Video Game Designers (15-1255.01)** Design core features of video games. Specify innovative game and role-play mechanics, story lines, and character biographies. Create and maintain design documentation. Guide and collaborate with production staff to produce games as designed.¹³

¹⁰ [Special Effects Artists and Animators \(bls.gov\)](#)

¹¹ [Film and Video Editors and Camera Operators \(bls.gov\)](#)

¹² [Ibid.](#)

¹³ [Video Game Designers \(onetonline.org\)](#)

Contact information:

Luke Meyer, Director

Los Angeles Center of Excellence

Lmeyer7@mtsac.edu

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.



POWERED BY



DATA SOURCES

- O*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

Important Disclaimer: All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon components or recommendations contained in this study.

© 2024 California Community Colleges Chancellor's Office,
Centers of Excellence for Labor Market Research, Economic and Workforce Development Program