

Program Endorsement Brief: 0614.20 – Electronic Game Design
Digital Media: Multimedia Interaction and Game Design (Certificate of Achievement)
 Los Angeles/Orange County Center of Excellence, October 2021

Summary Analysis

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 checked="" type="checkbox"/>	No <input type="checkbox"/>	
Living Wage: (Entry-Level, 25th)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Education:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Emerging Occupation(s)			
	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

The Los Angeles/Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to two middle-skill occupations: *web developers and digital interface designers* (15-1257) and *special effects artists and animators* (27-1014); and one emerging occupation: *video game designers* (15-1255.01).

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.¹ This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there appears to be a supply gap for the occupations of interest in the region. While entry-level wages exceed the self-sufficiency standard wage in Los Angeles County, the majority of annual openings for the occupations in this report typically require a bachelor's degree. **Therefore, due to some of the criteria being met, the COE endorses this program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, there is projected to be **1,536 jobs available annually** in the region due to new job growth and replacements, **which is more than the 926 awards conferred annually** by educational institutions in the region.

¹ 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.

- **Living Wage Criteria** – In Los Angeles County, **all of the annual job openings** for these multimedia interaction and game design occupations have **entry-level wages above the self-sufficiency standard hourly wage** (\$18.10/hour).²
- **Educational Criteria** – In the LA/OC region, **52% of the annual job openings** for the occupations of interest **typically require a bachelor’s degree**.
 - National-level educational attainment data indicates between **25% and 27% of workers in the field have completed some college or an associate degree**.

Supply:

- Between 2017 and 2020, **21 community colleges** in the LA/OC region issued awards related to the occupations of interest, conferring an average of **239 awards**.
- Between 2016 and 2019, non-community college institutions in the region conferred an average of **687 awards in relevant programs**.

² Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California on 10/20/2021. For more information, visit: <http://selfsufficiencystandard.org/california>.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for the two occupations of interest. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 3% through 2025. There will be more than 1,500 job openings per year through 2025 due to job growth and replacements.

This report includes employment projection data by Emsi which uses EDD information. 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. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, it may impact the projections. At this time, it is not possible to quantify the full impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the full impacts of COVID-19 into account.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties³

Geography	2020 Jobs	2025 Jobs	2020-2025 Change	2020-2025 % Change	Annual Openings
Los Angeles	14,203	14,657	454	3%	1,253
Orange	3,524	3,639	115	3%	283
Total	17,727	18,296	569	3%	1,536

Wages

The labor market endorsement in this report considers the hourly wages for the two occupations of interest 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 LA/OC region. Detailed wage information, by county, is included in Appendix A.

Los Angeles County — Both occupations of interest have entry-level wages above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$22.23 and \$23.53. Experienced workers can expect to earn wages between \$49.81 and \$61.61, which are above the self-sufficiency standard wage.

Orange County — The majority (72%) of annual openings for the occupations of interest have entry-level wages above the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$15.49 and \$22.01. Experienced workers can expect to earn wages between \$46.89 and \$52.00, which are above the self-sufficiency standard wage.

³ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Job Postings

Over the past 12 months, there have been 10,972 online job postings related to the occupations of interest in the region. The highest number of job postings were for front-end developers, web developers, UX designers, web designers, and UI/UX developers. The top skills were JavaScript, Adobe Photoshop, web development, front-end development, and website design. The top employers, by number of job postings, in the region were Blizzard Entertainment, Amazon, and Electronic Arts Incorporated.

It is important to note that the job postings data included in this section reflects online job postings listed in the past 12 months and does not yet demonstrate the full impact of COVID-19. While employers have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.

Educational Attainment

The Bureau of Labor Statistics (BLS) lists a bachelor’s degree as the typical entry-level education for *special effects artists and animators*; and an associate degree for *web developers and digital interface designers*. In the LA/OC region, the majority of annual job openings (52%) typically require a bachelor’s degree. National-level educational attainment data indicates that between 25% and 27% of workers in the field have completed some college or an associate degree. Of the 50% of job postings listing a minimum education requirement in Los Angeles/Orange County, 6% (336) requested a high school or vocational training, 2% (100) requested an associate degree, and 92% (5,011) requested a bachelor’s degree.

Educational Supply

Community College Supply — Exhibit 2 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 Mt. San Antonio, LA Mission, and Santa Monica. Over the past 12 months, there were 17 other related program recommendation requests from regional community colleges.

Exhibit 2: Regional community college awards (certificates and degrees), 2017-2020

TOP Code	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
0614.00	Digital Media	Glendale	-	-	1	0
		LA Mission	-	1	4	2
		LA Trade-Tech	7	19	11	12
		Long Beach	1	-	-	0
		Rio Hondo	-	-	2	1
		LA Subtotal	8	20	18	15
		Coastline	-	3	-	1
		Golden West	9	10	10	10
		Irvine Valley	15	9	1	8

TOP Code	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
		Santa Ana	-	-	1	0
		OC Subtotal	24	22	12	19
		Supply Subtotal/Average	32	42	30	35
0614.10	Multimedia	East LA	-	-	2	1
		LA Mission	12	21	18	17
		Long Beach	1	-	-	0
		Pasadena	5	6	1	4
		Santa Monica	5	5	5	5
		LA Subtotal	23	32	26	27
		Cypress	1	-	1	1
		Orange Coast	-	1	2	1
		Santiago Canyon	10	9	3	7
		OC Subtotal	11	10	6	9
		Supply Subtotal/Average	34	42	32	36
0614.20	Electronic Game Design	Pasadena	-	-	1	0
		LA Subtotal	-	-	1	0
		Golden West	1	3	2	2
		OC Subtotal	1	3	2	2
		Supply Subtotal/Average	1	3	3	2
0614.30	Website Design and Development	LA Pierce	-	3	2	2
		Mt San Antonio	9	9	7	8
		Pasadena	-	-	1	0
		Santa Monica	-	-	2	1
		LA Subtotal	9	12	12	11
		Coastline	-	1	1	1
		Fullerton	-	3	-	1
		Irvine Valley	2	3	-	2
		Orange Coast	-	-	9	3
		Saddleback	4	7	2	4
		Santa Ana	1	-	2	1
Santiago Canyon	9	24	3	12		

TOP Code	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
		OC Subtotal	16	38	17	24
		Supply Subtotal/Average	25	50	29	35
0614.40	Animation	Cerritos	3	7	13	8
		East LA	6	14	12	11
		El Camino	1	5	5	4
		Glendale	6	2	6	5
		LA Mission	4	8	11	8
		Mt San Antonio	53	67	58	59
		Pasadena	-	2	1	1
		Rio Hondo	11	11	9	10
		Santa Monica	17	9	19	15
		LA Subtotal	101	125	134	120
		Cypress	3	7	1	4
		Fullerton	1	-	1	1
		Irvine Valley	1	1	1	1
		Orange Coast	-	-	1	0
		Santa Ana	2	15	-	6
		OC Subtotal	7	23	4	11
		Supply Subtotal/Average	108	148	138	131
		Supply Total/Average	200	285	232	239

Non-Community College Supply — For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that may provide training programs for the occupations of interest. Exhibit 3 shows the annual and three-year average number of awards conferred in programs crosswalked to the TOP in Exhibit 2. Due to different data collection periods, the most recent three-year period of available data is from 2016 to 2019. Between 2016 and 2019, non-community college institutions in the region conferred an average of 687 awards.

Exhibit 3: Regional non-community college awards, 2016-2019

CIP Code	Program	Institution	2016-17 Awards	2017-18 Awards	2018-19 Awards	3-Year Average
09.0702	Digital Communication and Media/Multimedia	CSU-Dominguez Hills	50	41	58	50
		Fremont College	1	1	1	1
		Los Angeles ORT College (CLOSED)	15	10	8	11
		Marymount University	-	-	3	1
		Vanguard University of Southern California	12	7	8	9
10.0304	Animation, Interactive Technology, Video Graphics and Special Effects	Art Center College of Design	28	9	18	18
		Gnomon	36	36	40	37
		Laguna College of Art and Design	22	11	37	23
		Los Angeles Film School	11	44	51	35
		Loyola Marymount University	12	20	15	16
		Mt Sierra College	3	6	-	3
		New York Film Academy	28	14	19	20
11.0801	Web Page, Digital/Multimedia and Information Resources Design	DeVry University-CA	36	18	7	20
		University of Phoenix-CA	1	1	2	1
50.0102	Digital Arts	Los Angeles Academy of Figurative Art	3	-	3	2
		Marymount University	12	17	15	15
		Otis College of Art and Design	63	92	69	75
		University of Southern California	22	16	14	17

CIP Code	Program	Institution	2016-17 Awards	2017-18 Awards	2018-19 Awards	3-Year Average
		Woodbury University	3	4	1	3
50.0401	Design and Visual Communications, General	Bethesda University	3	-	-	1
		Biola University	3	2	5	3
		Fashion Institute of Design & Merchandising-LA	181	155	142	159
		Gnomon	28	37	48	38
		Otis College of Art and Design	37	43	34	38
		Platt College-LA	-	5	-	2
		University of La Verne	1	-	-	0
				Woodbury University	3	4
50.0411	Game and Interactive Media Design	Chapman University	1	-	1	1
		Laguna College of Art and Design	24	29	20	24
		Los Angeles Film School	12	27	9	16
		Mt Sierra College	13	9	-	7
		New York Film Academy	15	4	4	8
		UC-Irvine	3	-	-	1
		University of Southern California	32	23	31	29
		Woodbury University	2	1	3	2
Supply Total/Average			713	682	666	687

Appendix A: Occupational demand and wage data by county

Exhibit 4. Los Angeles County

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Web Developers and Digital Interface Designers (15-1257)	7,049	7,343	294	4%	533	\$23.53	\$35.67	\$49.81
Special Effects Artists and Animators (27-1014)	7,155	7,314	159	2%	720	\$22.23	\$40.04	\$61.61
Total	14,203	14,657	454	3%	1,253			

Exhibit 5. Orange County

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Web Developers and Digital Interface Designers (15-1257)	2,706	2,817	111	4%	204	\$22.01	\$33.48	\$46.89
Special Effects Artists and Animators (27-1014)	818	822	4	0%	79	\$15.49	\$30.51	\$52.00
Total	3,524	3,639	115	3%	283			

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Web Developers and Digital Interface Designers (15-1257)	9,755	10,160	405	4%	737	Associate degree
Special Effects Artists and Animators (27-1014)	7,972	8,136	164	2%	799	Bachelor's degree
Total	17,727	18,296	569	3%	1,536	

Appendix B: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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