Interactive Art and Design

September 2017

Prepared by the Los Angeles/Orange County Center of Excellence for Labor Market Research

Occupation Codes and Descriptions

Currently, there are three occupations in the standard occupational classification (SOC) system related to interactive art and design. The occupation titles and descriptions, as well as reported job titles are included in Exhibit 1.

Exhibit 1 – Occupations, descriptions and sample job titles

SOC Code	Title	Description	Sample of Reported Job Titles
15-1134	Web Developers	Design, create, and modify Web sites. Analyze user needs to implement Web site content, graphics, performance, and capacity. May integrate Web sites with other computer applications. May convert written, graphic, audio, and video components to compatible Web formats by using software designed to facilitate the creation of Web and multimedia content.	Designer, Technology Applications Engineer, Web Architect, Web Design Specialist, Web Designer, Web Developer, Web Development Director, Web Development Instructor, Webmaster
27-1014	Multimedia Artists and Animators	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.	3D Animator, 3D Artist, Animation Director, Animator, Art Director, Artist, Creative Director, Graphic Artist, Graphic Designer, Illustrator
27-1024	Graphic Designers	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.	Artist, Creative Director, Creative Manager, Design Director, Designer, Graphic Artist, Graphic Designer, Online Producer, Production Artist, Publications Designer

Source: O*NET Online

Current and Future Employment

In Los Angeles County, the number of interactive art and design-related job is expected to increase by 5% over the next five years. More than 3,000 job opportunities will be available annually for this group of occupations through 2021 due to new job growth and replacement need (e.g., retirements). Exhibit 2 contains detailed employment projections data for these occupations.

Exhibit 2 – Five-year projections for interactive art and design-related occupations in Los Angeles County

SOC	Occupation	2016 Jobs	2021 Jobs	2016 - 2021 Change	2016 - 2021 % Change	Annual Openings
27-1024	Graphic Designers	16,336	16,493	157	1%	1,574
15-1134	Web Developers	7,611	8,402	791	10%	732
27-1014	Multimedia Artists and Animators	7,472	8,031	559	7%	808
		31,419	32,927	1,508	5%	3,115

Source: Economic Modeling Specialists International (EMSI)

Earnings

In Los Angeles County, the entry-level average wage for occupations related to interactive art and design ranges between $12.35 and $17.98 per hour. Two of the three occupations have entry wages above the MIT Living Wage[1] estimate of $13.08 per hour for a single adult. The average annual earnings for these occupations in the region range from $53,075 to $69,070 per year, assuming full-time employment.

Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings is represented by the 10th percentile of wages, median hourly earnings is represented by the 50th percentile of wages, and experienced hourly earnings is represented by the 90th percentile of wages, demonstrating various levels of employment.

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[1] MIT Living Wage Calculator. http://livingwage.mit.edu/

Exhibit 3 – Earnings for interactive art and design-related occupations in Los Angeles County, 2016

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings	Average Annual Earnings
15-1134	Web Developers	$17.98	$26.95	$58.28	$69,070
27-1024	Graphic Designers	$15.16	$21.33	$41.45	$53,075
27-1014	Multimedia Artists and Animators	$12.35	$30.86	$57.00	$68,787

Source: Economic Modeling Specialists International (EMSI)

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is employing interactive art and design professionals, and what they are looking for in potential candidates. To identify job postings related to interactive art and design, the following keywords/codes were used: graphic designers (27-1024), multimedia artists and animators (27-1014), and web developers (15-1134).

Top Occupations

In 2016, there were 13,468 job postings related to interactive art and design. Approximately two-thirds of the postings (68%) were for web developers (9,183 job postings). There were 10,806 job postings for the same cluster of occupations in 2015, and 8,351 job postings in 2014.

Exhibit 4 – Top occupations in job postings (n=13,468)

SOC Code	Occupation	Job Postings, Full Year 2016
15-1134	Web Developers	9,183
27-1024	Graphic Designers	3,417
27-1014	Multimedia Artists and Animators	868

Source: Labor Insight/Jobs (Burning Glass)

Top Titles

The top job titles for employers posting job ads related to interactive art and design are listed in Exhibit 5. Graphic designer is mentioned as the job title in 13% of all relevant job postings (1,761 of 13,468 job postings).

Exhibit 5 –Job titles (n=13,468)

Title	Job Postings, Full Year 2016
Graphic Designer	1,761
Web Developer	1,420
Front End Developer	1,194
PHP Developer	789
Web Designer	391

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 6 lists the major employers hiring professionals in the field of interactive art and design. Fiverr and Petco were the top employers for these jobs in 2016. The top worksite cities in the region for these jobs were Los Angeles, Santa Monica, El Segundo, Glendale, and Pasadena.

Exhibit 6 – Top employers (n=3,483)

Employer	Job Postings, Full Year 2016
Fiverr	108
Petco	108
Cybercoder	96
Apple Inc.	75
Disney	57

Source: Labor Insight/Jobs (Burning Glass)

Skills

JavaScript is the most sought after skill by employers (4,545 postings). Other job-specific skills desired by employers include Adobe Photoshop, web development, graphic design, HTML5, and jQuery.
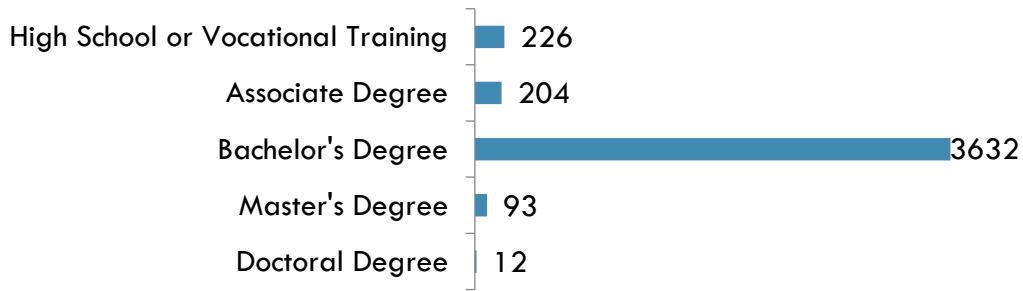
Exhibit 7 –Job skills (n=9,888)

Skills	Job Postings, Full Year 2016	Skills	Job Postings, Full Year 2016
JavaScript	4,545	Graphic Design	2,412
Adobe Photoshop	3,424	HTML5	2,323
Web Development	2,760	jQuery	2,239

Source: Labor Insight/Jobs (Burning Glass)

Advertised Education Levels

Exhibit 8 displays the education level requested by employers in online job ads. The majority of employers were looking for a candidate with a bachelor's degree. Approximately 69% of job postings did not specify a level of education.

Exhibit 8 – 2016 Online job ads with minimum advertised education requirements for interactive art and design-related occupations (n=4,167)

High School or Vocational Training	226
Associate Degree	204
Bachelor's Degree	3632
Master's Degree	93
Doctoral Degree	12

Source: Labor Insight/Jobs (Burning Glass)

Industry Concentration

Interactive art and design-related jobs in Los Angeles County are most often found in the motion picture and video production industry (25% of total jobs in the industry). Exhibit 9 shows the industries that are the largest employers of these occupations.

Exhibit 9 – Industries with the largest number of interactive art and design jobs, 2016

NAICS (6-Digit)	Industry	Occupation Group Jobs in Industry	% of Occupation Group in Industry
512110	Motion Picture and Video Production	7,918	25%
541430	Graphic Design Services	2,918	9%
541410	Interior Design Services	1,886	6%
711510	Independent Artists, Writers, and Performers	1,165	4%
541511	Custom Computer Programming Services	1,145	4%

Source: Economic Modeling Specialists International (EMSI)

Education and Training

Exhibit 10 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training, and percentage of workers in the field who hold a community

college award or have completed some postsecondary courses. Between 27% and 30% of the workforce has completed some community college education as their highest level of education.

Exhibit 10 – Education and training requirements, 2016

SOC	Occupation	Typical entry-level education	Typical on-the-job training	% of Community College Award Holders or Some Postsecondary Coursework
27-1024	Graphic Designers	Bachelor's degree	None	30%
27-1014	Multimedia Artists and Animators	Bachelor's degree	Moderate-term on-the-job training	27%
15-1134	Web Developers	Associate degree	None	27%

Source: Economic Modeling Specialists International, Bureau of Labor Statistics Employment Projections (Educational Attainment)

There are 14 community colleges in Los Angeles County that train students in programs related to the field of digital media. Exhibit 11 displays the headcount and annual average community college awards for each of the colleges training in this field. Headcount is the actual number of students enrolled, regardless of credit hours. It is also important to note that an award is not equivalent to a single person in search of a job opening, since a student may earn more than one award (e.g. an associate degree and a certificate).

Between 2012 and 2015, the total annual average community college awards conferred was 83 (37 associate degrees and 46 certificates) across one program: Digital Media (0614.00)

Exhibit 11 – CCC Student Awards (by TOP and College)

TOP Code	Program	College	2012 – 2015 Annual Average			
			CCC Headcount	CCC Associate Degrees	CCC Certificates	Total Average CC Awards
0614.00	Digital Media	Cerritos	N/A	1	N/A	1
		Citrus	128	1	7	8
		East LA	N/A	1	N/A	1
		Glendale	87	2	3	5
		LA Mission	361	9	1	10
		LA Pierce	99	N/A	2	2
		LA Trade	75	N/A	N/A	N/A
		LA Valley	320	N/A	N/A	N/A
		Long Beach	N/A	1	1	2
		Mt San Antonio	N/A	9	16	25
		Pasadena	17	N/A	2	2
		Rio Hondo	N/A	5	N/A	5
		Santa Monica	415	8	14	22
		West LA	148	N/A	N/A	N/A
		Total	**1,650**	**37**	**46**	**83**

Source: California Community Colleges Chancellor's Office MIS Data Mart

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of the Digital Media Program (TOP code 0614.00) in Los Angeles County for the 2014 to 2015 academic year.

- The median annual wage after program completion is $16,627
- 29% of students are earning a living wage
- 49% of students are employed within six months after completing a program

Source: CTE LaunchBoard

Program Recommendation

This report was compiled by the Los Angeles/Orange County Center of Excellence to provide regional labor market data for the program recommendation of interactive art and design. This report is to help determine whether there is demand in the local labor market that is not being met by the supply from programs of study (CCC and non-CCC) that align with this occupation group.

Based on the data, the COE has determined there is an unmet need for the interactive art and design program in Los Angeles County. Reasons include:

- The number of interactive art and design-related jobs is forecasted to increase by 5% over the next five years, resulting in over 3,000 annual job openings
- On average, only 83 awards (associate degrees and certificates) are conferred each year
- While most employers were seeking candidates with a bachelor's degree, between 27-30% of the workforce has completed some community college, indicating that these jobs may be attainable for community college students

Sources

O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

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Notes

Data included in this analysis represents the labor market demand for positions related to the interactive art and design field. Standard occupational classification (SOC) codes were chosen based on the national education level required for employment (associate degree and postsecondary certificate) as well as the proportion of current workers who hold a community college award or have had some community college training. This selection process narrows the labor market analysis to the most relevant employment opportunities for students with community college education and/or training.

Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and should not be used to establish current job openings, because the numbers may include duplicate job postings or postings intended to gather a pool of applicants. Real-time labor market information can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions.