










# Graphic Art and Design

## Labor Market Analysis for San Diego College of Continuing Education

September 2021

### Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED EDUCATION FOR MAJORITY OF OCCUPATIONS ANALYZED
 <b>Proceed with Caution</b>	 	 	<input checked="" type="checkbox"/> Bachelor's Degree+ <input type="checkbox"/> Associate Degree <input type="checkbox"/> Some College or Certificate <input type="checkbox"/> HS Diploma or Equivalent <input type="checkbox"/> Less than a HS Diploma <input type="checkbox"/> Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING	NUMBER OF ANNUAL JOB OPENINGS	
 	<b>MEDIUM</b> 	<b>HIGH</b> 	

This report provides labor market information for occupations selected by San Diego College of Continuing Education for its *Graphic Art and Design* program. These occupations include “Art Directors,” “Artists and Related Workers, All Other,” “Graphic Designers,” “Special Effects Artists and Animators,” and “Web Developers and Digital Interface Designers.” According to available labor market information, *Graphic Art and Design Occupations* in San Diego County have a labor market demand of 600 annual job openings (while average demand for a single occupation in San Diego County is 242 annual job openings). On average, four institutions supply 63 for-credit awards and one institution supplies zero noncredit awards in San Diego County for these occupations. In short, the region supplies 63 for-credit and noncredit awards for 600 annual job openings, suggesting that there is a supply gap in the labor market. Entry-level wages for these occupations are below the living wage, but median earnings are above the living wage. This brief recommends proceeding with caution when developing a new program and supports a program modification because 1) there is a supply gap; 2) there is a high number of annual job openings; and 3) entry-level wages are below the living wage, but median earnings are above the living wage. Colleges should note that **employers typically require a bachelor’s degree as the minimum educational requirement for these occupations.**

## Introduction

This report provides labor market information in San Diego County for occupations related to the six-digit Taxonomy of Programs (TOP)<sup>1</sup> code, Graphic Art and Design (TOP 1030.00). The purpose of this brief is to assist noncredit program providers in the region, such as San Diego College of Continuing Education (SDCCE), with program development and review. SDCCE identified the following occupational codes from the Standard Occupational Classification (SOC)<sup>2</sup> system for *Graphic Art and Design*, which will be the focus of this report:

- **Art Directors** (SOC 27-1011): Formulate design concepts and presentation approaches for visual productions and media, such as print, broadcasting, video, and film. Direct workers engaged in artwork or layout design.
- **Artists and Related Workers, All Other** (SOC 27-1019): All artists and related workers not listed separately.
- **Graphic Designers** (SOC 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.
- **Special Effects Artists and Animators** (SOC 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.
- **Web Developers and Digital Interface Designers** (SOC 15-1257): Develop and implement websites, web applications, application databases, and interactive web interfaces. Evaluate code to ensure that it is properly structured, meets industry standards, and is compatible with browsers and devices. Optimize website performance, scalability, and server-side code and processes. May develop website infrastructure and integrate websites with other computer applications. 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.

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<sup>1</sup> Taxonomy of Programs (TOP) is a system of codes used by the California Community Colleges for the purpose of collecting, calculating, or disseminating data about similar training programs.

<sup>2</sup> The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

For the purpose of this report, these occupations are referred to as *Graphic Art and Design Occupations*.

## Projected Occupational Demand

Between 2020 and 2025, *Graphic Art and Design Occupations* are projected to increase by 88 net jobs or one percent (Exhibit 1a). Employers in San Diego County will need to hire 600 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

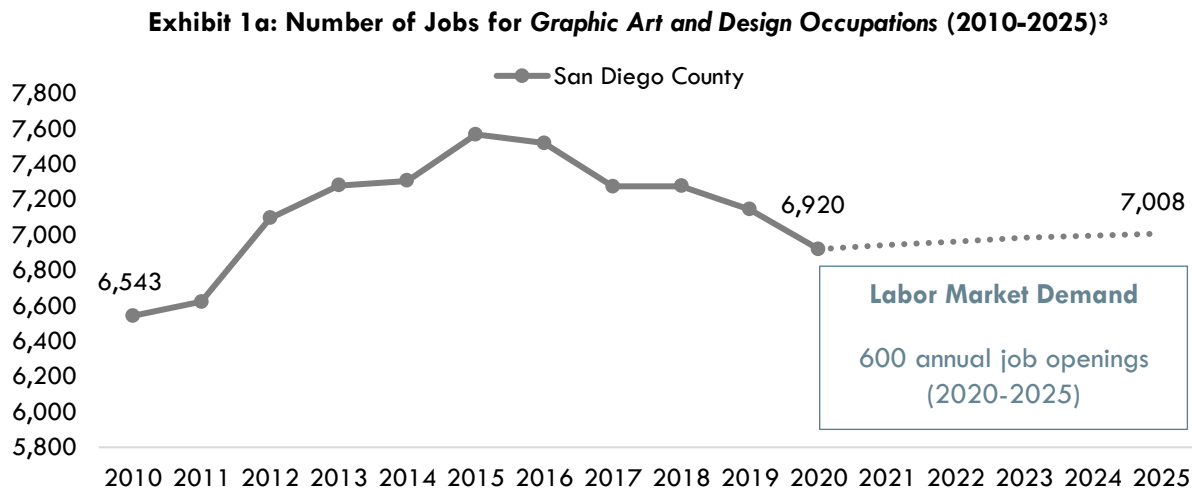


Exhibit 1b disaggregates the projected number of jobs change by occupation. “Postsecondary Teachers” are projected to have the most labor market demand between 2020 and 2025, with 247 annual job openings.

**Exhibit 1b: Number of Jobs for Graphic Art and Design Occupations in San Diego County (2020-2025)<sup>4</sup>**

Occupational Title	2020 Jobs	2025 Jobs	2020 - 2025 Net Jobs Change	2020-2025 % Net Jobs Change	Annual Job Openings (Demand)
Graphic Designers	2,894	2,851	-43	-1	247
Web Developers and Digital Interface Designers	2,261	2,398	137	6%	181
Art Directors	1,044	1,041	-3	0%	102
Special Effects Artists and Animators	571	568	-3	-1%	55
Artists and Related Workers, All Other	150	150	0	0%	15
<b>Total</b>	<b>6,920</b>	<b>7,008</b>	<b>88</b>	<b>1%</b>	<b>600</b>

<sup>3</sup> EMSI 2021.2; QCEW, Non-QCEW, Self-Employed.

<sup>4</sup> EMSI 2021.2; QCEW, Non-QCEW, Self-Employed.

## Earnings

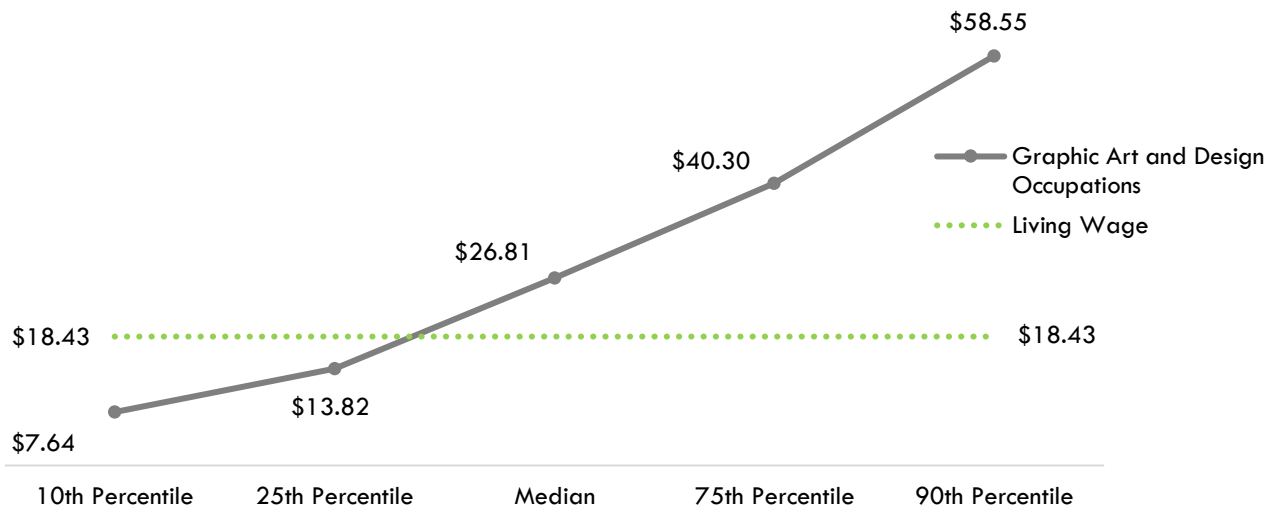
Exhibit 2a disaggregates hourly earnings by occupation. The entry-level hourly earnings for *Graphic Art and Design Occupations* range from \$5.96 to \$22.39.

**Exhibit 2a: Hourly Earnings for *Graphic Art and Design Occupations* in San Diego County<sup>5</sup>**

Occupational Title	Entry-Level Hourly Earnings (25 <sup>th</sup> Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 <sup>th</sup> Percentile)
Web Developers and Digital Interface Designers	\$22.39	\$33.79	\$45.99
Graphic Designers	\$18.35	\$26.58	\$35.21
Art Directors	\$11.98	\$32.19	\$49.52
Special Effects Artists and Animators	\$10.43	\$25.52	\$42.81
Artists and Related Workers, All Other	\$5.96	\$15.98	\$27.96

On average, the entry-level hourly earnings for *Graphic Art and Design Occupations* are \$13.82; this is less than the living wage for a single adult in San Diego County, which is \$18.43 per hour (Exhibit 2b).<sup>6</sup>

**Exhibit 2b: Average Hourly Earnings<sup>7</sup> for *Graphic Art and Design Occupations* in San Diego County<sup>8</sup>**



<sup>5</sup> EMSI 2021.2; QCEW, Non-QCEW, Self-Employed.

<sup>6</sup> "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. [insightccd.org/family-needs-calculator/](https://insightccd.org/family-needs-calculator/).

<sup>7</sup> 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

<sup>8</sup> EMSI 2021.2; QCEW, Non-QCEW, Self-Employed.

## Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.<sup>9</sup> According to TOP and CIP<sup>10</sup> data, four community colleges supply the region with for-credit awards for Graphic Art and Design (TOP 1030.00): Cuyamaca College, Palomar College, San Diego City College, and Southwestern College (Exhibit 3a).

**Exhibit 3a: Number of For-Credit Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Years 2017-18 through 2019-20)**

College	Award Type	PY 17-18	PY 18-19	PY 19-20	3-Yr Total Average
Cuyamaca	Associate Degree	7	11	12	10
	Certificate 30 to < 60 units	1	3	5	3
	<b>Total</b>	<b>8</b>	<b>14</b>	<b>17</b>	<b>13</b>
Palomar	Associate Degree	7	5	8	7
	Certificate 6 to < 18 units	3	0	0	1
	<b>Total</b>	<b>10</b>	<b>5</b>	<b>8</b>	<b>8</b>
San Diego City	Associate Degree	13	29	11	18
	Certificate 30 to < 60 units	11	25	4	13
	Certificate 18 to < 30 units	2	5	0	2
	<b>Total</b>	<b>26</b>	<b>59</b>	<b>15</b>	<b>33</b>
Southwestern	Associate Degree	7	7	9	8
	Certificate 6 to < 18 units	3	0	0	1
	<b>Total</b>	<b>10</b>	<b>7</b>	<b>9</b>	<b>9</b>
<b>Total</b>		<b>54</b>	<b>85</b>	<b>49</b>	<b>63</b>

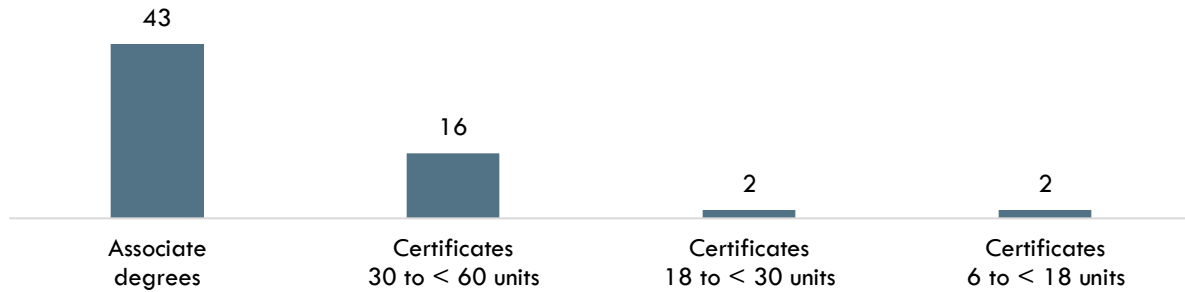
*Note: The numbers may not add up due to rounding.*

<sup>9</sup> TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart ([datamart.cccco.edu](http://datamart.cccco.edu)) and CIP data comes from the Integrated Postsecondary Education Data System ([nces.ed.gov/ipeds/use-the-data](http://nces.ed.gov/ipeds/use-the-data)).

<sup>10</sup> There are two CIP codes related to Graphic Art and Design (TOP 1030.00): Graphic Communications, General (CIP 10.0301) and Graphic Design (CIP 50.0409)

By for-credit award type, the colleges supplied the most awards for **associate degrees** based on the three-year average (program years 2017-18 through 2019-20) (Exhibit 3b).

**Exhibit 3b: Total Number of For-credit Awards by Type for Graphic Art and Design (TOP 1030.00) in San Diego County (3-Yr Average)**



In terms of noncredit awards, only San Diego College of Continuing Education provides noncredit awards for Graphic Art and Design (TOP 1030.00), with a three-year average of **zero** noncredit awards (program years 2017-18 through 2019-20) (Exhibit 4).

**Exhibit 4: Number of Noncredit Awards Conferred by SDCCE (Program Years 2017-18 through 2019-20)**

Program Title	Award Type	PY 17-18	PY 18-19	PY 19-20	3-Yr Total Average
Graphic Reproduction Program	Noncredit	0	0	0	0

## Demand vs. Supply

Comparing labor demand (annual openings) with labor supply<sup>11</sup> suggests that there is a **supply gap** in San Diego County, with **600** annual openings and **63** for-credit and noncredit awards supplied by the region (Exhibit 5).

**Exhibit 5: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)**

TOP6 Program	Demand (Annual Openings)	Supply (Total Annual Average Supply)		Supply Gap or Oversupply
		Noncredit	For-Credit	
Graphic Art and Design (TOP 1030.00)	600	0	63	<b>537</b>

**Please note:** This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

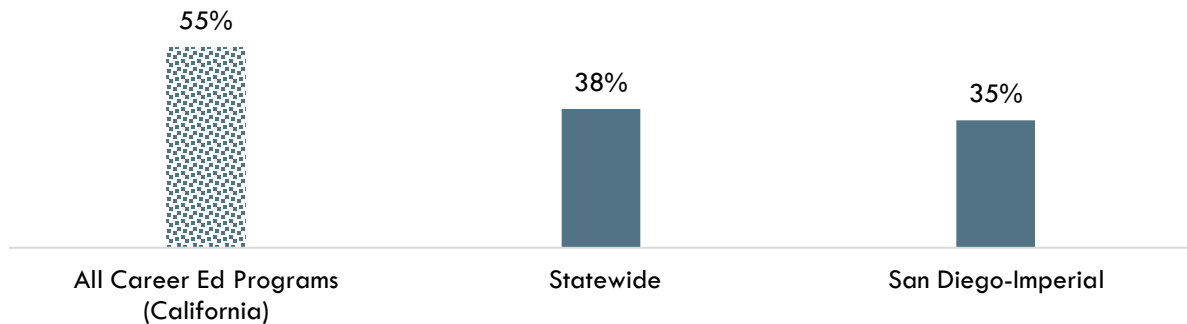
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<sup>11</sup> Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

## Student Outcomes and Regional Comparisons

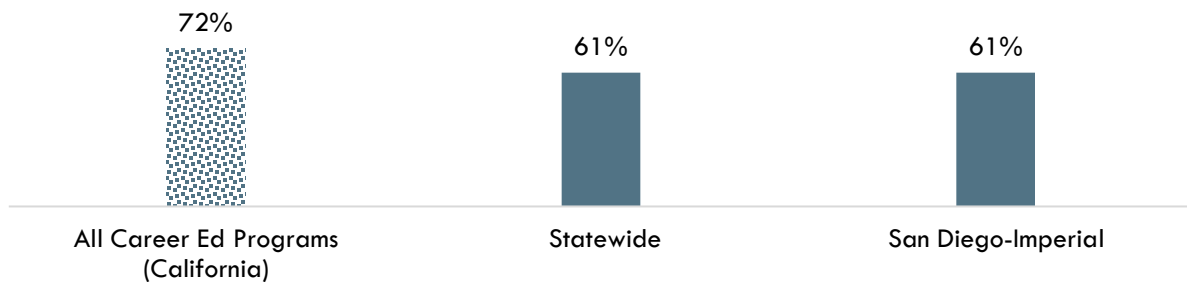
According to the California Community Colleges LaunchBoard, 35 percent of students in the San Diego-Imperial region earned a living wage after completing a Graphic Art and Design (TOP 1030.00) program, compared to 38 percent statewide and 55 percent of students in Career Education programs in general across the state (Exhibit 6a).<sup>12</sup>

**Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program  
(Graphic Art and Design, PY 2017-18)<sup>13</sup>**



According to the California Community Colleges LaunchBoard, 61 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a Graphic Art and Design (TOP 1030.00) program, compared to 61 percent statewide and 72 percent of students in Career Education programs in general across the state (Exhibit 6b).<sup>14</sup>

**Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program  
(Graphic Art and Design, PY 2016-17)<sup>15</sup>**



<sup>12</sup> "California Community Colleges Strong Workforce Program," California Community Colleges, [calpassplus.org/LaunchBoard/SWP.aspx](http://calpassplus.org/LaunchBoard/SWP.aspx).

<sup>13</sup> Among completers and skills builders who exited, the proportion of students who attained a living wage.

<sup>14</sup> "California Community Colleges Strong Workforce Program," California Community Colleges, [calpassplus.org/LaunchBoard/SWP.aspx](http://calpassplus.org/LaunchBoard/SWP.aspx).

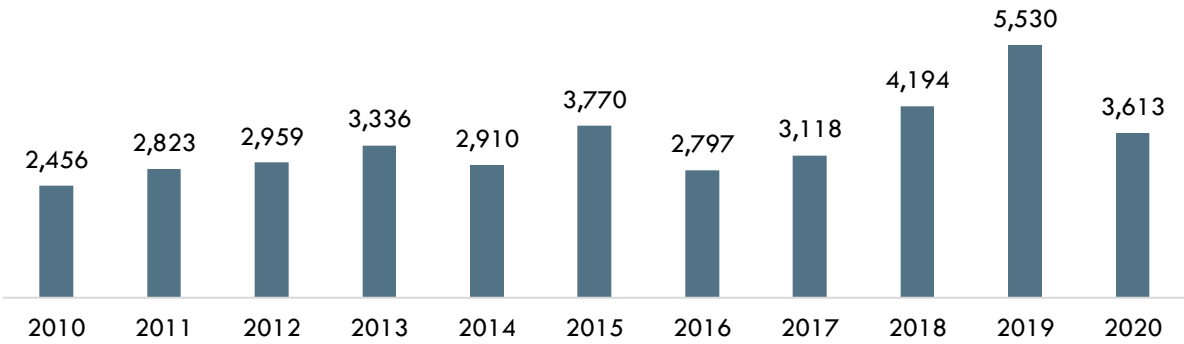
<sup>15</sup> Most recent year with available data is Program Year 2016-17. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.



## Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market that are not captured by historical data. Between 2010 and 2020, there was an average of 3,410 online job postings per year for *Graphic Art and Design Occupations* in San Diego County (Exhibit 7). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (see Exhibit 1b). Employers may post a position multiple times for various reasons, such as increasing the pool of applicants, for example.

**Exhibit 7: Number of Online Job Postings for *Graphic Art and Design Occupations* in San Diego County (2010-2020)<sup>16</sup>**



## Top Employers

Between January 1, 2018 and December 31, 2020, the top five employers in San Diego County for *Graphic Art and Design Occupations* were [Qualcomm](#), [ServiceNow](#), [VIA Technical](#), [University of California San Diego](#), and [Thermo Fisher Scientific](#) based on online job postings (Exhibit 8).

**Exhibit 8: Top Employers for *Graphic Art and Design Occupations* in San Diego County<sup>17</sup>**

Top Employers	
<ul style="list-style-type: none"> <li>• Qualcomm</li> <li>• ServiceNow</li> <li>• VIA Technical</li> <li>• University of California San Diego</li> <li>• Thermo Fisher Scientific, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>• Sony Electronics, Inc.</li> <li>• Intuit</li> <li>• Synergy Direct</li> <li>• Hewlett-Packard</li> <li>• Sharp Healthcare</li> </ul>

<sup>16</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2020.

<sup>17</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

## Education, Skills, and Certifications

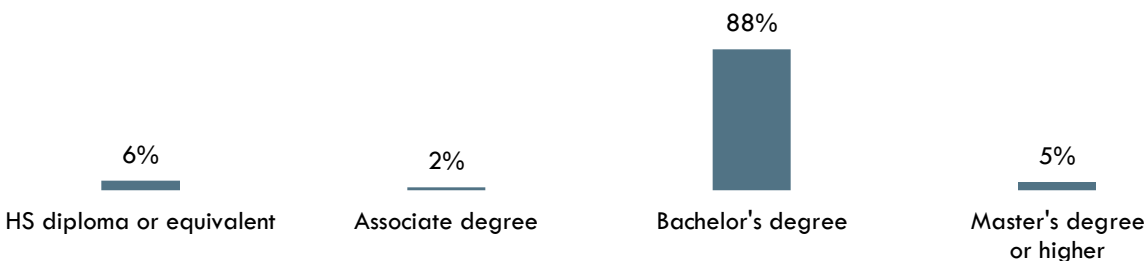
*Graphic Art and Design Occupations* have a national educational attainment ranging from no formal educational credential to a bachelor's degree (Exhibit 9a).

**Exhibit 9a: National Educational Attainment for *Graphic Art and Design Occupations*<sup>18</sup>**

Occupational Title	Typical Entry-Level Education
Art Directors	Bachelor's degree
Special Effects Artists and Animators	Bachelor's degree
Graphic Designers	Bachelor's degree
Web Developers and Digital Interface Designers	Associate degree
Artists and Related Workers, All Other	No formal educational credential

Based on online job postings between January 1, 2018 and December 31, 2020 in San Diego County, employers posted a bachelor's degree as the educational requirement for *Graphic Art and Design Occupations* (Exhibit 9b).<sup>19</sup>

**Exhibit 9b: Educational Requirements for *Graphic Art and Design Occupations* in San Diego County<sup>20</sup>**



<sup>18</sup> EMSI 2021.2; QCEW, Non-QCEW, Self-Employed.

<sup>19</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

<sup>20</sup> "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified April 9, 2021. [bls.gov/emp/tables/educational-attainment.htm](https://bls.gov/emp/tables/educational-attainment.htm).

Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2018 and December 31, 2020.

**Exhibit 10: Top Skills for *Graphic Art and Design Occupations* in San Diego County<sup>21</sup>**

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> <li>• Web Development</li> <li>• Graphic Design</li> <li>• Web Site Design</li> <li>• Web Application Development</li> <li>• Front-end Development</li> <li>• Software Development</li> <li>• User Interface Design</li> <li>• UX Wireframes</li> <li>• Hypertext Preprocessor</li> <li>• Software Engineering</li> <li>• Visual Design</li> <li>• React Javascript</li> <li>• Bootstrapping</li> <li>• Project Management</li> <li>• Agile Development</li> </ul>	<ul style="list-style-type: none"> <li>• Creativity</li> <li>• Communication Skills</li> <li>• Teamwork / Collaboration</li> <li>• Problem Solving</li> <li>• Detail-Oriented</li> <li>• Research</li> <li>• Writing</li> <li>• Organizational Skills</li> <li>• Meeting Deadlines</li> <li>• Planning</li> <li>• Troubleshooting</li> <li>• Written Communication</li> <li>• Multi-Tasking</li> <li>• Editing</li> <li>• Time Management</li> </ul>	<ul style="list-style-type: none"> <li>• JavaScript</li> <li>• Adobe Photoshop</li> <li>• Adobe InDesign</li> <li>• Adobe Illustrator</li> <li>• Adobe Acrobat</li> <li>• Adobe Creative Suite</li> <li>• HTML5</li> <li>• Git</li> <li>• jQuery</li> <li>• AngularJS</li> <li>• SQL</li> <li>• Java</li> <li>• Hypertext Preprocessor</li> <li>• CSS</li> <li>• MySQL</li> </ul>

<sup>21</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

Exhibit 11 lists the top certifications that appeared in online job postings between January 1, 2018 and December 31, 2020.

**Exhibit 11: Top Certifications for *Graphic Art and Design Occupations* in San Diego County<sup>22</sup>**

Top Certifications in Online Job Postings

1. Security Clearance
  2. Project Management Certification
  3. CompTIA Security+
  4. Adobe InDesign (Certified)
  5. Business Analysis Certificate
  6. Certified Business Analysis Professional (CBAP)
  7. Six Sigma Certification
  8. IT Infrastructure Library (ITIL) Certification
  9. Makeup Artist
  10. Certification of Capability in Business Analysis (CCBA)
  11. Certified Novell Administrator
  12. HAZWOPER
  13. Agile Certification
  14. Certified Scrum Trainer (CST)
  15. Certified ScrumMaster (CSM)
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<sup>22</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

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### Important Disclaimers

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. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

This workforce demand report uses state and federal job projection data that was developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.