










Strategic Design Occupations

Labor Market Analysis: San Diego County

December 2021

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED EDUCATION FOR MAJORITY OF OCCUPATIONS ANALYZED
 <p>Do Not Proceed with New Program</p>	 	 	<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	
 	<p>HIGH</p> 	<p>HIGH</p> 	

This brief provides labor market information about *Strategic Design Occupations* to assist the San Diego and Imperial Counties Community Colleges with program development and strategic planning. *Strategic Design Occupations* include “Art Directors,” “Commercial and Industrial Designers,” “Designers, All Other,” “Marketing Managers”, and “Web Developers and Digital Interface Designers.” According to available labor market information, *Strategic Design Occupations* in San Diego County have a labor market demand of 708 annual job openings (while average demand for a single occupation in San Diego County is 242 annual job openings), and 23 institutions supply 718 awards for these occupations, suggesting that there is an oversupply in the labor market. Entry-level wages except for “Art Directors” and “Designers, All Other” and median wages for these occupations are above the living wage. This brief recommends that colleges do not proceed with developing a **new** program for these occupations, but supports a program modification because 1) an oversupply exists for these occupations and 2) a high number of institutions train for these occupations.

Introduction

This report provides labor market information in San Diego County for the following occupational codes in the Standard Occupational Classification (SOC)¹ system:

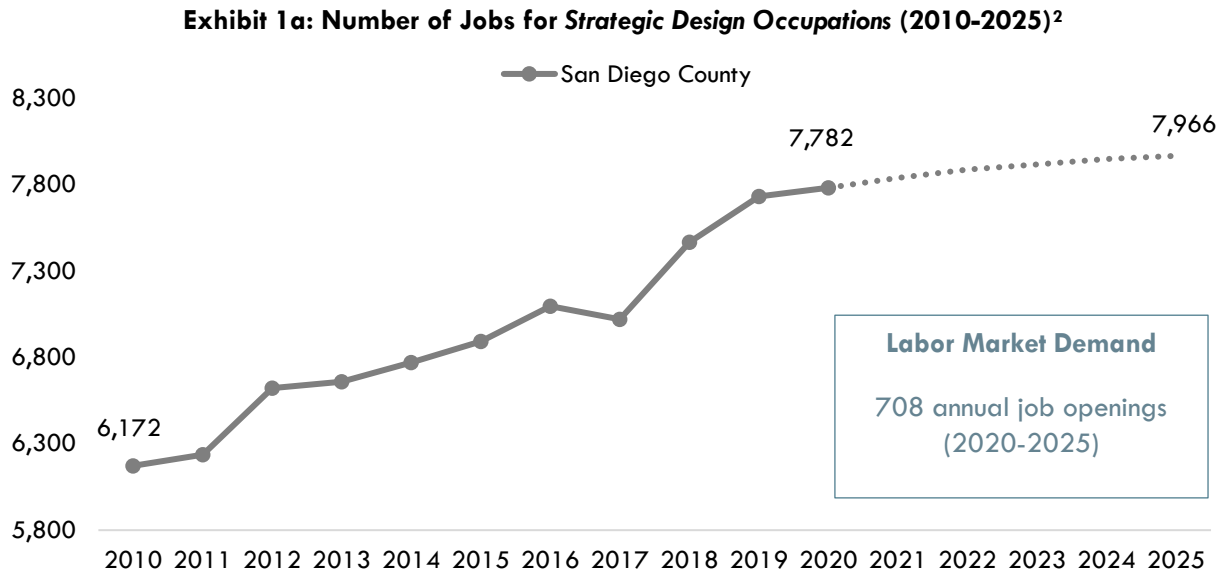
- **Art Directors** (SOC 27-1011): Formulate design concepts and presentation approaches for visual productions and media, such as print, broadcasting, video, and film. Direct workers engaged in artwork or layout design.
- **Commercial and Industrial Designers** (SOC 27-1021): Design and develop manufactured products, such as cars, home appliances, and childrens toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design.
- **Designers, All Other** (SOC 27-1029): All designers not listed separately. "All Other" titles represent occupations with a wide range of characteristics which do not fit into one of the detailed O*NET-SOC occupations.
- **Marketing Managers** (SOC 11-2021): Plan, direct, or coordinate marketing policies and programs, such as determining the demand for products and services offered by a firm and its competitors, and identify potential customers. Develop pricing strategies with the goal of maximizing the firms profits or share of the market while ensuring the firms customers are satisfied. Oversee product development or monitor trends that indicate the need for new products and services.
- **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.

¹ 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 *Strategic Design Occupations*.

Projected Occupational Demand

Between 2020 and 2025, *Strategic Design Occupations* are projected to increase by 184 net jobs or two percent (Exhibit 1a). Employers in San Diego County will need to hire 708 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.



² EMSI 2021.4; QCEW, Non-QCEW, Self-Employed.

Exhibit 1b disaggregates the projected number of jobs change by occupation. “Marketing Managers” are projected to have the most labor market demand between 2020 and 2025, with 313 annual job openings.

Exhibit 1b: Number of Jobs for Strategic Design Occupations in San Diego County (2020-2025)³

Occupational Title	2020 Jobs	2025 Jobs	2020 - 2025 Net Jobs Change	2020-2025 % Net Jobs Change	Annual Job Openings (Demand)
Marketing Managers	3,390	3,521	131	4%	313
Web Developers and Digital Interface Designers	2,238	2,363	125	6%	190
Art Directors	1,034	1,039	5	0%	107
Designers, All Other	731	662	-69	-9%	63
Commercial and Industrial Designers	389	381	-8	-2%	35
Total	7,782	7,966	184	2%	708

Earnings

Exhibit 2a disaggregates hourly earnings by occupation. The entry-level hourly earnings for *Strategic Design Occupations* range from \$11.84 to \$42.75.

Exhibit 2a: Hourly Earnings for Strategic Design Occupations in San Diego County⁴

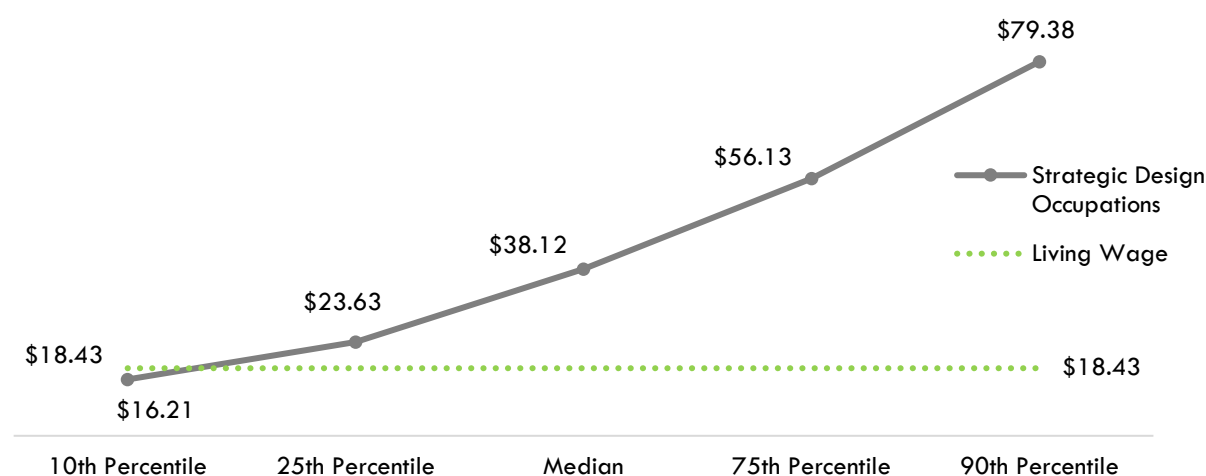
Occupational Title	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Marketing Managers	\$42.75	\$61.63	\$85.26
Commercial and Industrial Designers	\$25.83	\$36.55	\$54.75
Web Developers and Digital Interface Designers	\$22.34	\$33.76	\$45.97
Designers, All Other	\$15.41	\$26.65	\$45.32
Art Directors	\$11.84	\$32.02	\$49.36

³ EMSI 2021.4; QCEW, Non-QCEW, Self-Employed.

⁴ EMSI 2021.4; QCEW, Non-QCEW, Self-Employed.

On average, the entry-level hourly earnings for *Strategic Design Occupations* are **\$23.63**; this is less than the living wage for a single adult in San Diego County, which is **\$18.43** per hour (Exhibit 2b).⁵

Exhibit 2b: Average Hourly Earnings⁶ for *Strategic Design Occupations* in San Diego County⁷



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.⁸ There are **16** TOP codes and **12** CIP codes related to *Strategic Design Occupations* (Exhibit 3).

Exhibit 3: Related TOP and CIP Codes for *Strategic Design Occupations*⁹

TOP or CIP Code	TOP or CIP Program Title
TOP 0509.00	Marketing and Distribution
TOP 0509.10	Advertising
TOP 0614.00	Digital Media
TOP 0614.10	Multimedia
TOP 0614.20	Electronic Game Design
TOP 0614.30	Website Design and Development
TOP 0614.40	Animation

⁵ "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightcced.org/family-needs-calculator/.

⁶ 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.

⁷ EMSI 2021.4; QCEW, Non-QCEW, Self-Employed.

⁸ TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data).

⁹ This brief uses a conservative estimate of program supply and only calculates awards from the TOP codes in the Exhibit 3.

TOP or CIP Code	TOP or CIP Program Title
TOP 0614.60	Computer Graphics and Digital Imagery
TOP 0702.10	Software Applications
TOP 0707.00	Computer Software Development
TOP 0709.10	E-Commerce (Technology emphasis)
TOP 0953.00	Drafting Technology
TOP 0953.60	Technical Illustration
TOP 0956.00	Manufacturing and Industrial Technology
TOP 1009.00	Applied Design
TOP 1030.00	Graphic Art and Design
CIP 09.0702	Digital Communication and Media/Multimedia
CIP 10.0303	Prepress/Desktop Publishing and Digital Imaging Design
CIP 10.0304	Animation, Interactive Technology, Video Graphics and Special Effects
CIP 11.0801	Web Page, Digital/Multimedia and Information Resources Design
CIP 11.0803	Computer Graphics
CIP 11.0899	Computer Software and Media Applications, Other
CIP 50.0102	Digital Arts
CIP 50.0401	Design and Visual Communications, General
CIP 50.0404	Industrial and Product Design
CIP 50.0411	Game and Interactive Media Design
CIP 52.1401	Marketing/Marketing Management, General
CIP 52.1404	Digital Marketing

According to TOP data, nine community colleges supply the region with awards for these occupations: Cuyamaca College, Grossmont College, Palomar College, MiraCosta College, San Diego City College, San Diego Mesa College, San Diego Miramar College, San Diego College of Continuing Education, and Southwestern College. According to CIP data, 14 non-community-college institutions supply the region with awards: Advanced Training Associates, Ashford University, California College-San Diego, California Institute of Arts & Technology, Escondido Adult School, National University, Newschool of Architecture and Design, Platt College-San Diego, Point Loma Nazarene University, Poway Adult School, Southern States University, University of California-San Diego, University of San Diego and Vista Adult School, (Exhibit 4).

**Exhibit 4: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions
(Program Year 2016-17 through PY2019-20 Average)**

TOP or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY17-18 to PY19-20)	Other Educational Institutions 3-Yr Annual Average Awards (PY16-17 to PY18-19)	3-Yr Total Average Supply (PY16-17 to PY19-20)
0509.00	Marketing and Distribution	27	0	27
	• Grossmont	6	0	
	• MiraCosta	16	0	
	• San Diego Mesa	3	0	
	• Southwestern	2	0	
0509.10	Advertising	12	0	12
	• Palomar	12	0	
0614.00	Digital Media	26	0	26
	• MiraCosta	10	0	
	• Palomar	12	0	
	• San Diego Cont Ed	4	0	
0614.10	Multimedia	31	0	31
	• MiraCosta	11	0	
	• Palomar	4	0	
	• San Diego City	0	0	
	• San Diego Mesa	16	0	
0614.20	Electronic Game Design	6	0	6
	• San Diego Mesa	0	0	
	• Southwestern	6	0	

TOP or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY17-18 to PY19-20)	Other Educational Institutions 3-Yr Annual Average Awards (PY16-17 to PY18-19)	3-Yr Total Average Supply (PY16-17 to PY19-20)
0614.30	Website Design and Development	120	0	120
	• Cuyamaca	5	0	
	• MiraCosta	9	0	
	• Palomar	1	0	
	• San Diego Cont Ed	76	0	
	• San Diego Mesa	15	0	
	• Southwestern	14	0	
0614.40	Animation	12	0	12
	• Palomar	9	0	
	• San Diego Mesa	1	0	
	• Southwestern	2	0	
0614.60	Computer Graphics and Digital Imagery	24	0	24
	• MiraCosta	21	0	
	• Palomar	2	0	
	• San Diego Mesa	0	0	
	• San Diego Miramar	1	0	
0702.10	Software Applications	74	0	74
	• Grossmont	1	0	
	• MiraCosta	10	0	
	• San Diego City	4	0	
	• San Diego Cont Ed	52	0	
	• San Diego Miramar	6	0	
	• Southwestern	1	0	

TOP or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY17-18 to PY19-20)	Other Educational Institutions 3-Yr Annual Average Awards (PY16-17 to PY18-19)	3-Yr Total Average Supply (PY16-17 to PY19-20)
0707.00	Computer Software Development	30	0	30
	• Palomar	30	0	
0709.10	E-Commerce (Technology emphasis)	2	0	2
	• MiraCosta	1	0	
	• Southwestern	1	0	
0953.00	Drafting Technology	45	0	45
	• MiraCosta	17	0	
	• Palomar	23	0	
	• San Diego City	1	0	
	• Southwestern	4	0	
0953.60	Drafting Technology	1	0	1
	• San Diego City	1	0	
0956.00	Manufacturing and Industrial Technology	14	0	14
	• San Diego City	14	0	
1009.00	Applied Design	2	0	2
	• MiraCosta	2	0	
1030.00	Graphic Art and Design	63	0	63
	• Cuyamaca	13	0	
	• Palomar	8	0	
	• San Diego City	33	0	
	• Southwestern	9	0	

TOP or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY17-18 to PY19-20)	Other Educational Institutions 3-Yr Annual Average Awards (PY16-17 to PY18-19)	3-Yr Total Average Supply (PY16-17 to PY19-20)
09.0702	Digital Communication and Media/Multimedia	0	5	5
	• National University	0	4	
	• Platt College-San Diego	0	1	
10.0303	Prepress/Desktop Publishing and Digital Imaging Design	0	0	0
	• Platt College-San Diego	0	0	
10.0304	Animation, Interactive Technology, Video Graphics and Special Effects	0	3	3
	• Newschool of Architecture and Design	0	2	
	• Platt College-San Diego	0	1	
11.0801	Web Page, Digital/Multimedia and Information Resources Design	0	2	2
	• Ashford University	0	0	
	• California College San Diego	0	0	
	• California Institute of Arts & Technology	0	2	
	• Platt College-San Diego	0	0	
11.0899	Computer Software and Media Applications, Other	0	70	70
	• Advanced Training Associates	0	3	
	• Escondido Adult School	0	29	
	• Platt College-San Diego	0	0	
	• Poway Adult School	0	26	
	• Vista Adult School	0	12	
50.0102	Digital Arts	0	1	1
	• Point Loma Nazarene University	0	1	

TOP or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY17-18 to PY19-20)	Other Educational Institutions 3-Yr Annual Average Awards (PY16-17 to PY18-19)	3-Yr Total Average Supply (PY16-17 to PY19-20)
50.0401	Design and Visual Communications, General	0	11	11
	<ul style="list-style-type: none"> University of California-San Diego 	0	11	
50.0404	Industrial and Product Design	0	3	3
	<ul style="list-style-type: none"> Newschool of Architecture and Design 	0	3	
50.0411	Game and Interactive Media Design	0	0	0
	<ul style="list-style-type: none"> National University 	0	0	
52.1401	Marketing/Marketing Management, General	0	134	134
	<ul style="list-style-type: none"> Point Loma Nazarene University 	0	21	
	<ul style="list-style-type: none"> Southern States University 	0	2	
	<ul style="list-style-type: none"> University of San Diego 	0	111	
			Total	718

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply¹⁰ suggests that there is an **oversupply** for these occupations in San Diego County, with **708** annual openings and **718** awards. Comparatively, there are **9,874** annual openings in California and **8,093** awards, suggesting that there is a supply gap across the state¹¹ (Exhibit 5).

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

	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	708	718	10
California	9,874	8,093	1,781

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.

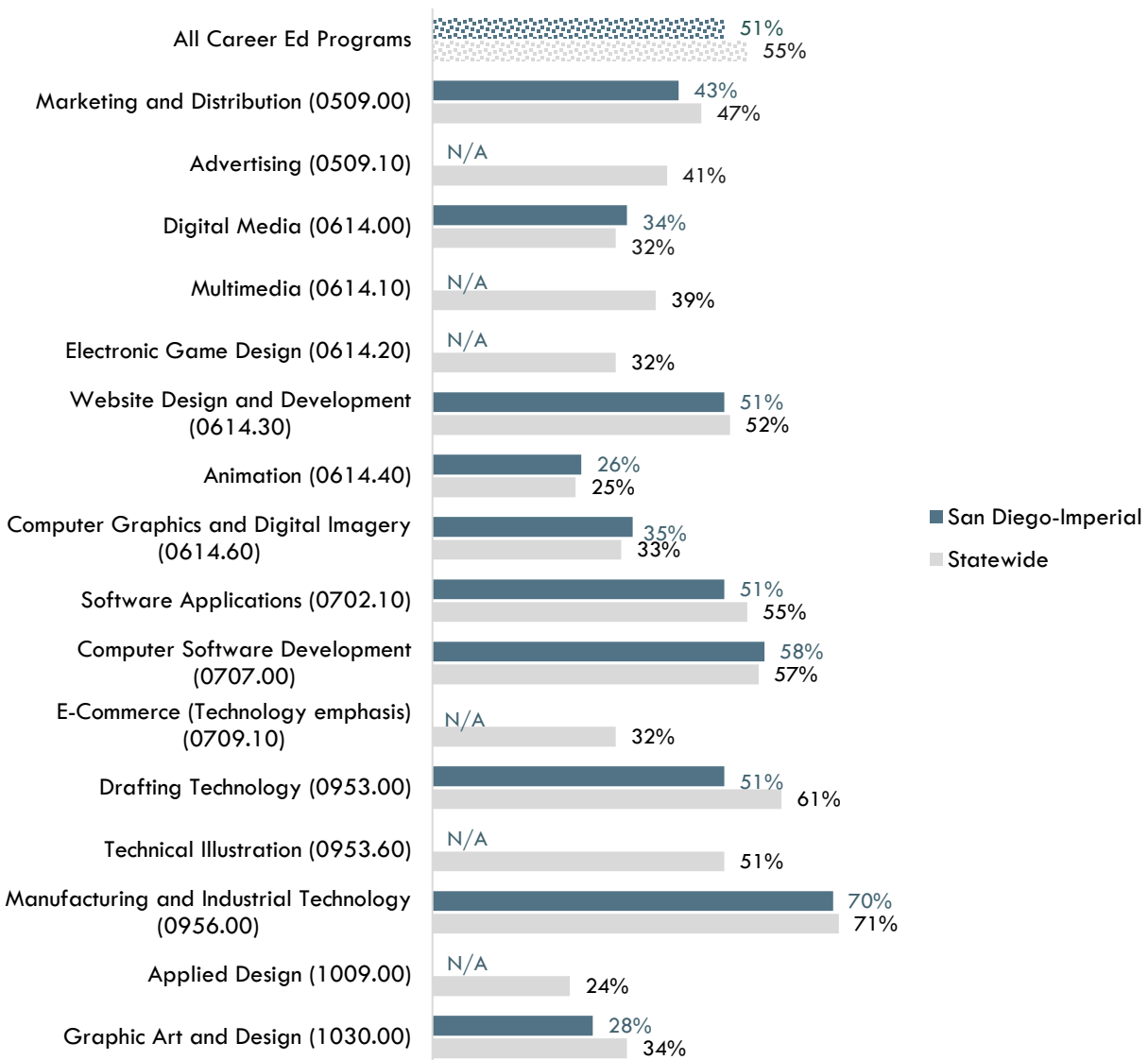
¹⁰ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

¹¹ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/Supply-and-Demand.aspx.

Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, 26 to 70 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Strategic Design Occupations*, compared to 24 to 71 percent statewide and 55 percent of students in Career Education programs in general across the state (Exhibit 6a).¹²

Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, PY2018-19¹³



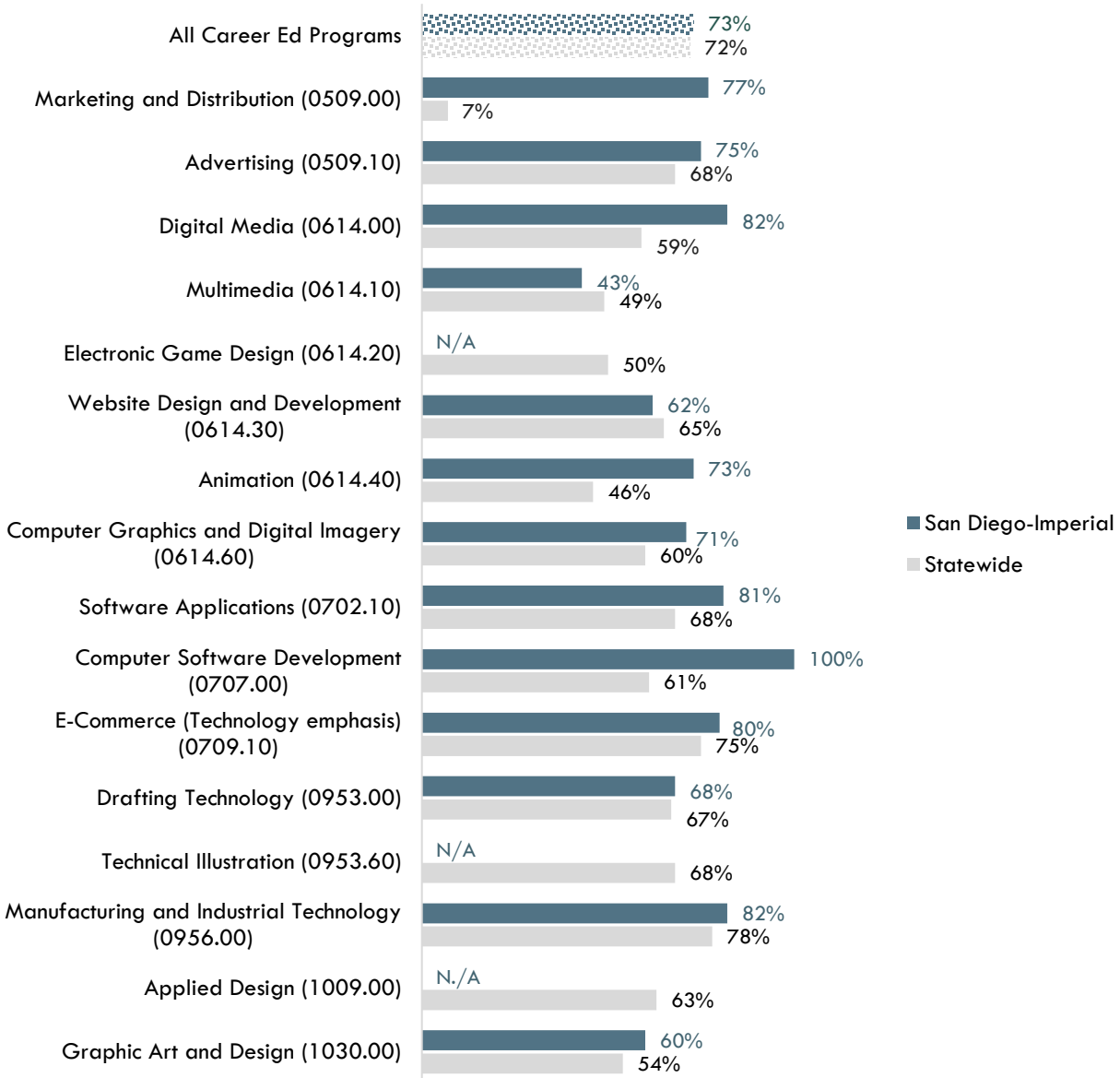
"N/A" indicates insufficient data

¹² "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

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

According to the California Community Colleges LaunchBoard, 43 to 100 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a program related to *Strategic Design Occupations*, compared to seven to 78 percent statewide and 72 percent of students in Career Education programs in general across the state (Exhibit 6b).¹⁴

Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2017-18¹⁵



"N/A" indicates insufficient data

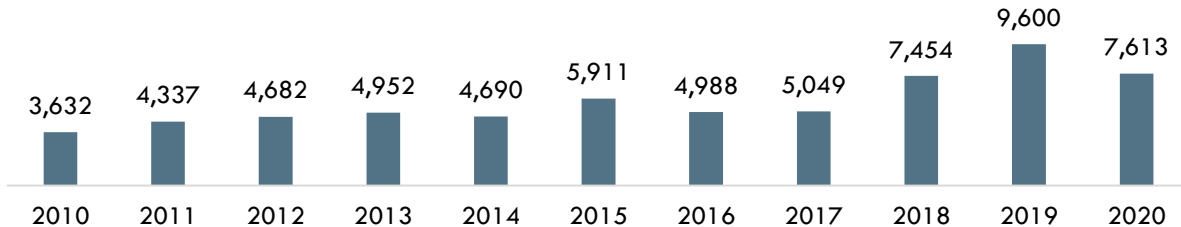
¹⁴ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁵ Most recent year with available data is Program Year 2017-18. 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 5,719 online job postings per year for *Strategic 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 Strategic Design Occupations in San Diego County (2010-2020)¹⁶



Top Employers

Between January 1, 2018 and December 31, 2020, the top five employers in San Diego County for *Strategic Design Occupations* were *Thermo Fisher Scientific*, *Intuit*, *Illumina Incorporated*, *Qualcomm*, and *Servicenow* based on online job postings (Exhibit 8).

Exhibit 8: Top Employers for Strategic Design Occupations in San Diego County¹⁷

Top Employers	
<ul style="list-style-type: none"> • Thermo Fisher Scientific Inc. • Intuit • Illumina Incorporated • Qualcomm • Servicenow 	<ul style="list-style-type: none"> • Teradata Operations, Inc. • Becton Dickinson • Anthem Blue Cross • Viasat • Petco

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

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

Education, Skills, and Certifications

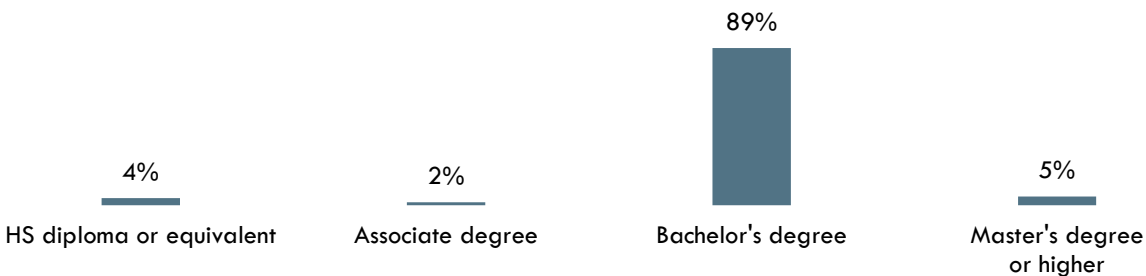
Strategic Design Occupations have a national educational attainment ranging from an **associate degree** to a **bachelor's degree** (Exhibit 9a).

Exhibit 9a: National Educational Attainment for *Strategic Design Occupations*¹⁸

Occupational Title	Typical Entry-Level Education
Art Directors	Bachelor's degree
Commercial and Industrial Designers	Bachelor's degree
Designers, All Other	Bachelor's degree
Marketing Managers	Bachelor's degree
Web Developers and Digital Interface Designers	Associate degree

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 *Strategic Design Occupations* (Exhibit 9b).¹⁹

Exhibit 9b: Educational Requirements for *Strategic Design Occupations* in San Diego County²⁰



¹⁸ EMSI 2021.4; QCEW, Non-QCEW, Self-Employed.

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

²⁰ "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.

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 *Strategic Design Occupations* in San Diego County²¹

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Product Management • Marketing • Project Management • Budgeting • Product Development • Web Development • Social Media • Market Strategy • Digital Marketing • Marketing Management • Product Marketing • Web Application Development • Customer Service • Market Research • Scheduling 	<ul style="list-style-type: none"> • Communication Skills • Teamwork / Collaboration • Creativity • Research • Problem Solving • Planning • Writing • Detail-Oriented • Organizational Skills • Written Communication • Presentation Skills • Self-Starter • Verbal / Oral Communication • Building Effective Relationships • Multi-Tasking 	<ul style="list-style-type: none"> • JavaScript • Adobe Photoshop • Microsoft Excel • Software Development • SQL • Microsoft PowerPoint • Adobe Indesign • HTML5 • Git • jQuery • Scrum • User Interface (UI) Design • Software Engineering • Agile Development • AngularJS

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

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

Exhibit 11: Top Certification for *Strategic Design Occupations* in San Diego County²²

Top Certification in Online Job Postings

1. Security Clearance
 2. Project Management Certification
 3. Project Management Professional (PMP)
 4. Certified ScrumMaster (CSM)
 5. Google AdWords Training
 6. Certified Scrum Product Owner (CSPO)
 7. CompTIA Security+
 8. IT Infrastructure Library (ITIL) Certification
 9. Series 7
 10. Six Sigma Certification
 11. Business Analysis Certificate
 12. Certified Business Analysis Professional (CBAP)
 13. NICET I
 14. Master Project Management
 15. Investment Advisor
-

²² 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.