



# Labor Market Analysis for Program Modification Graphic and Interactive Design Occupations Solano College

Prepared by Bay Region Center of Excellence for Labor Market Research

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## Recommendation

Based on all available data, there appears to be an “undersupply” of Graphic and Interactive Design workers compared to the demand for this cluster of occupations in the Bay region and in the North Bay sub-region (Marin, Napa, Solano, Sonoma counties). There is a projected annual gap of about 4,244 students in the Bay region and 256 students in the North Bay Sub-Region.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 1030.00 - Graphic Art and Design programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at Solano College and in the region.

This report profiles Graphic and Interactive Design Occupations in the 12 county Bay region and in the North Bay sub-region for Program modification (substantial change) at Solano College.

- **Marketing Managers (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 firm’s profits or share of the market while ensuring the firm’s customers are satisfied. Oversee product development or monitor trends that indicate the need for new products and services.  
Entry-Level Educational Requirement: Bachelor’s degree  
Training Requirement: None  
Percentage of Community College Award Holders or Some Postsecondary Coursework: 13%
- **Web Developers (15-1254):** 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.  
Entry-Level Educational Requirement: Bachelor’s degree  
Training Requirement: None  
Percentage of Community College Award Holders or Some Postsecondary Coursework: 23%
- **Web and Digital Interface Designers (15-1255):** 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.

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Percentage of Community College Award Holders or Some Postsecondary Coursework: 23%

- **Commercial and Industrial Designers (27-1021):** Develop and design manufactured products, such as cars, home appliances, and children's toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design.

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Percentage of Community College Award Holders or Some Postsecondary Coursework: 20%

- **Graphic Designers (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.

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Percentage of Community College Award Holders or Some Postsecondary Coursework: 25%

## Occupational Demand

**Table 1. Employment Outlook for Graphic and Interactive Design Occupations in Bay Region**

Occupation	2022 Jobs	2027 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Marketing Managers	23,382	24,259	876	4%	10,394	2,079	\$68	\$94
Web Developers	3,979	4,443	463	12%	1,777	355	\$34	\$53
Web and Digital Interface Designers	11,183	12,031	848	8%	5,020	1,004	\$29	\$63
Commercial and Industrial Designers	1,664	1,698	34	2%	625	125	\$38	\$52
Graphic Designers	10,545	10,308	-237	-2%	4,424	885	\$25	\$37
<b>Total</b>	<b>50,754</b>	<b>52,738</b>	<b>1,984</b>	<b>4%</b>	<b>22,240</b>	<b>4,448</b>	<b>\$47</b>	<b>\$71</b>

Source: Lightcast 2024.1

Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

**Table 2. Employment Outlook for Graphic and Interactive Design Occupations in North Bay Sub-region**

Occupation	2022 Jobs	2027 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Marketing Managers	1,275	1,301	26	2%	533	107	\$48	\$71
Web Developers	268	268	0	-0%	89	18	\$26	\$43
Web and Digital Interface Designers	491	491	0	0%	184	37	\$23	\$37
Commercial and Industrial Designers	220	221	1	1%	82	16	\$27	\$41
Graphic Designers	1,287	1,242	-45	-3%	531	106	\$19	\$30

Occupation	2022 Jobs	2027 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
<b>Total</b>	<b>3,540</b>	<b>3,523</b>	<b>-17</b>	<b>0%</b>	<b>1,419</b>	<b>284</b>	<b>\$31</b>	<b>\$47</b>

Source: Lightcast 2024.1

North Bay Sub-Region includes: Marin, Napa, Solano, Sonoma Counties

### Job Postings in Bay Region and North Bay Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (May. 2023 - Apr. 2024)**

Occupation	Bay Region	North Bay
Marketing Managers	17,320	17,320
Web Developers	5,527	5,527
Web and Digital Interface Designers	3,908	3,908
Commercial and Industrial Designers	2,226	2,226
Graphic Designers	1,297	1,297

Source: Lightcast

**Table 4a. Top Job Titles for Graphic and Interactive Design Occupations for latest 12 months (May. 2023 - Apr. 2024) Bay Region**

Title	Bay	Title	Bay
Product Managers	1,847	Graphic Designers	343
Back End Software Engineers	883	Front End Software Engineers	330
Product Designers	766	UX Researchers	314
Marketing Managers	640	Marketing Product Managers	309
Back End Engineers	553	UX Designers	300
Principal Product Managers	513	Directors of Marketing	266
Product Marketing Managers	483	Front End Developers	234
Directors of Product Management	461	Technical Product Managers	213
Front End Engineers	384	Platform Product Managers	198

Source: Lightcast

**Table 4b. Top Job Titles for Graphic and Interactive Design Occupations for latest 12 months (May. 2023 - Apr. 2024) North Bay Sub-Region**

Title	North Bay	Title	North Bay
Product Managers	1,847	Graphic Designers	343
Back End Software Engineers	883	Front End Software Engineers	330
Product Designers	766	UX Researchers	314
Marketing Managers	640	Marketing Product Managers	309
Back End Engineers	553	UX Designers	300
Principal Product Managers	513	Directors of Marketing	266
Product Marketing Managers	483	Front End Developers	234
Directors of Product Management	461	Technical Product Managers	213
Front End Engineers	384	Platform Product Managers	198

Source: Lightcast

## Industry Concentration

**Table 5. Industries hiring Graphic and Interactive Design Workers in Bay Region**

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2022)	Jobs in Industry (2027)	% Change (2022-27)	% Occupation Group in Industry (2023)
Custom Computer Programming Services	4,849	5,768	19%	10%
Software Publishers	3,347	3,806	14%	7%
Web Search Portals and All Other Information Services	3,282	3,274	0%	6%
Corporate, Subsidiary, and Regional Managing Offices	2,386	2,279	-4%	5%
Computer Systems Design Services	2,396	2,344	-2%	5%
Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers	2,312	2,491	8%	4%
Data Processing, Hosting, and Related Services	1,861	2,367	27%	4%
Graphic Design Services	1,715	1,420	-17%	3%
Interior Design Services	1,578	1,530	-3%	3%
Administrative Management and General Management Consulting Services	1,233	1,438	17%	2%

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2022)	Jobs in Industry (2027)	% Change (2022-27)	% Occupation Group in Industry (2023)
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Source: Lightcast 2024.1

**Table 6. Top Employers Posting Graphic and Interactive Design Occupations in Bay Region and North Bay Sub-Region (May. 2023 - Apr. 2024)**

Employer	Bay	Employer	North Bay
Google	625	Google	625
Meta	588	Meta	588
Walmart	527	Walmart	527
Tiktok	489	Tiktok	489
Apple	446	Apple	446
Capital One	400	Capital One	400

Source: Lightcast

## Educational Supply

There are twelve community colleges in the Bay Region issuing 184 awards on average annually (last 3 years ending 2021-23) on TOP 1030.00 - Graphic Art and Design. In the North Bay Sub-Region, there are three community colleges that issued 28 awards on average annually (last 3 years) on this TOP code.

There is one four-year institution in the Bay Region issuing 20 Bachelor's degrees on average annually (last 3 years ending 2020-22) on CIP 50.0409- Graphic Design, but there are no four-year institutions in the North Bay Sub-Region issuing Bachelor's degrees on this CIP code.

**Table 7a. Community College Awards on TOP 1030.00 - Graphic Art and Design in Bay Region**

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Deanza	Silicon Valley	20	4	5	29
Diablo Valley	East Bay	12	4	0	16
Foothill	Silicon Valley	21	3	5	29
Laney	East Bay	4	3	1	8
Las Positas	East Bay	3	0	1	4
Los Medanos	East Bay	14	1	0	15
Marin	North Bay	1	0	2	3
Mission	Silicon Valley	11	6	0	17
Napa	North Bay	11	0	0	11
Ohlone	East Bay	3	1	0	4
San Francisco	Mid-Peninsula	6	5	23	34
Santa Rosa	North Bay	6	4	4	14
<b>Total</b>	<b>-</b>	<b>112</b>	<b>31</b>	<b>41</b>	<b>184</b>

Source: Data Mart

Note: The annual average for awards is 2019-20 to 2021-22.

**Table 7b. Bachelor’s Degree Awards on CIP 50.0409- Graphic Design in Bay Region**

College	Subregion	Bachelor's degree	Total
San Jose State University	Silicon Valley	20	20

Source: Data Mart

Note: The annual average for awards is 2019-20 to 2021-22.

## Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 4,448 annual openings for the Graphic and Interactive Design occupational cluster and 204 annual (3-year average) awards for an annual undersupply of 4,244 students. In the North Bay Sub-Region, there is also a gap with 284 annual openings and 28 annual (3-year average) awards for an annual undersupply of 256 students.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 1030.00 - Graphic Art and Design**

Metric Outcomes	Bay All CTE Program	Solano College All CTE Program	State 1030.00	Bay 1030.00	North Bay 1030.00	Solano College 1030.00
Students with a Job Closely Related to Their Field of Study	74%	68%	54%	60%	90%	NA
Median Annual Earnings for SWP Exiting Students	\$53,090	\$36,844	\$29,175	\$37,797	\$30,781	\$27,287
Median Change in Earnings for SWP Exiting Students	24%	27%	28%	22%	39%	59%
Exiting Students Who Attained the Living Wage	54%	54%	36%	36%	36%	NA

Source: Launchboard Strong Workforce Program Median of 2018 to 2021.

## Skills, Certifications and Education

**Table 9. Top Skills for Graphic and Interactive Design Occupations in Bay Region (May. 2023 - Apr. 2024)**

Skill	Posting	Skill	Posting
Marketing	11,761	Go-to-Market Strategy	3,402
Product Management	10,120	Software Engineering	3,387
New Product Development	6,327	JavaScript (Programming Language)	3,274
Computer Science	5,773	Scalability	3,230
User Experience (UX)	5,334	Product Roadmaps	3,085

Skill	Posting	Skill	Posting
Project Management	4,799	Application Programming Interface (API)	2,705
Agile Methodology	4,185	Prototyping	2,685
Product Marketing	3,816	Data Analysis	2,658
Product Strategy	3,469	Business To Business	2,629
Product Design	3,429	Artificial Intelligence	2,600

Source: Lightcast

**Table 10. Certifications for Graphic and Interactive Design Occupations in Bay Region (May. 2023 - Apr. 2024)**

Certification	Posting	Certification	Posting
Master Of Business Administration (MBA)	2,723	Agile Certification	31
Valid Driver's License	183	Certified Scrum Product Owner	28
Project Management Professional Certification	142	Salesforce Certification	22
Enterprise Desktop Administrator (Microsoft Certified IT Professional)	78	Product Certification	21
Security Clearance	55	Certified Scrum Master	21
Functional Skills Qualification	50	Microsoft Certified Professional	19
Bachelor Of Science In Business	41	Top Secret-Sensitive Compartmented Information (TS/SCI Clearance)	19
Software Development Engineer in Test	36	Certified In Production And Inventory Management	18
Project Management Certification	36		

Source: Lightcast

**Table 11. Education Requirements for Graphic and Interactive Design Occupations in Bay Region**

Education Level	Job Postings	% of Total
High school or GED	278	1%
Associate degree	312	1%
Bachelor's degree & higher	24,920	98%

Source: Lightcast

Note: 44% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

## Methodology

Occupations for this report were identified by use of job descriptions and skills listed in O\*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCCO Data Mart and CTE Launchboard.

## Sources

O\*Net Online

Lightcast

CTE LaunchBoard [www.calpassplus.org](http://www.calpassplus.org)

Launchboard

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor's Office MIS system

## Contacts

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