



# Labor Market Information Report

## Digital Media Arts Occupations

### Solano College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research

April 2023

#### Recommendation

Based on all available data, there appears to be an “undersupply” of Digital Media Arts 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 2,286 students in the Bay region and 109 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 Digital Media Arts Occupations in the 12 county Bay region and in the North Bay sub-region for a program modification at Solano College.

- **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: Associate degree  
Training Requirement: NA  
Percentage of Community College Award Holders or Some Postsecondary Coursework: NA%
- **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: NA  
Percentage of Community College Award Holders or Some Postsecondary Coursework: NA%
- **Special Effects Artists and Animators (27-1014):** 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.

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: NA

Percentage of Community College Award Holders or Some Postsecondary Coursework: 26%

- 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: NA

Percentage of Community College Award Holders or Some Postsecondary Coursework: 24%
- 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: NA

Percentage of Community College Award Holders or Some Postsecondary Coursework: 26%

## Occupational Demand

**Table 1. Employment Outlook for Digital Media Arts Occupations in Bay Region**

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Web Developers	5,450	6,474	1,024	19%	3,200	640	\$36	\$51
Web and Digital Interface Designers	5,549	6,581	1,032	19%	3,520	704	\$42	\$62
Special Effects Artists and Animators	2,247	2,391	145	6%	1,381	276	\$37	\$52
Commercial and Industrial Designers	1,328	1,370	41	3%	639	128	\$36	\$47
Graphic Designers	7,554	8,006	451	6%	3,964	793	\$26	\$36
<b>Total</b>	<b>22,128</b>	<b>24,821</b>	<b>2,693</b>	<b>12%</b>	<b>12,704</b>	<b>2,541</b>		

Source: Lightcast 2022.3

**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 Digital Media Arts Occupations in North Bay Sub-region**

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Web Developers	213	225	11	5%	93	19	\$29	\$41
Web and Digital Interface Designers	199	212	13	7%	99	20	\$33	\$48
Special Effects Artists and Animators	139	144	5	3%	82	16	\$35	\$50
Commercial and Industrial Designers	116	124	8	7%	61	12	\$27	\$40
Graphic Designers	721	753	32	4%	369	74	\$23	\$30
<b>Total</b>	<b>1,388</b>	<b>1,457</b>	<b>69</b>	<b>5%</b>	<b>704</b>	<b>141</b>		

Source: Lightcast 2022.3

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
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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 (Mar. 2022 - Feb. 2023)**

Occupation	Bay Region	North Bay
Web Developers	2,561	44
Commercial and Industrial Designers	841	12
Graphic Designers	420	37
Web and Digital Interface Designers	228	11
Special Effects Artists and Animators	125	1

Source: Lightcast

**Table 4a. Top Job Titles for Digital Media Arts Occupations for latest 12 months (Mar. 2022 - Feb. 2023)**  
Bay Region

Title	Bay	Title	Bay
Product Designers	317	UI/UX Designers	80
Front End Engineers	220	Front End Software Engineers	77
Back End Engineers	206	Product Engineers	49
Front End Developers	128	Lead Product Designers	47
UX Designers	118	User Experience Designers	46
Graphic Designers	109	Back End Developers	43
UX Researchers	106	Visual Designers	43
Web Developers	94	UI Developers	42
Back End Software Engineers	89	Product Design Engineers	40

Source: Lightcast

**Table 4b. Top Job Titles for Digital Media Arts Occupations for latest 12 months (Mar. 2022 - Feb. 2023)**  
North Bay Sub-Region

Title	North Bay	Title	North Bay
Graphic Designers	13	Art Producers	2
Product Designers	8	Cloud Developers	2
UI/UX Designers	4	Customer Experience Specialists	2
Web Developers	4	Digital Media Specialists	2

Title	North Bay	Title	North Bay
Full Stack JavaScript Developers	3	Environment Artists	2
Graphic Design Instructors	3	Full Stack Web Developers	2
Production Artists	3	Genius Administrators	2
User Researchers	3	Graphic Artists	2
Analog Design Engineers	2	Graphic Illustrators	2

Source: Lightcast

## Industry Concentration

**Table 5. Industries hiring Digital Media Arts Workers in Bay Region**

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2021)	Jobs in Industry (2026)	% Change (2021-26)	% Occupation Group in Industry (2022)
Internet Publishing and Broadcasting and Web Search Portals	3,480	4,250	22%	15%
Custom Computer Programming Services	2,699	3,182	18%	12%
Software Publishers	2,190	2,553	17%	10%
Computer Systems Design Services	975	1,068	10%	4%
Data Processing, Hosting, and Related Services	598	860	44%	3%
Interior Design Services	570	716	26%	3%
Graphic Design Services	534	471	-12%	2%
Corporate, Subsidiary, and Regional Managing Offices	508	484	-5%	2%
Advertising Agencies	471	440	-7%	2%
Electronic Shopping and Mail-Order Houses	470	523	11%	2%

Source: Lightcast 2022.3

**Table 6. Top Employers Posting Digital Media Arts Occupations in Bay Region and North Bay Sub-Region (Mar. 2022 - Feb. 2023)**

Employer	Bay	Employer	North Bay
Motion Recruitment	176	Recruiting From Scratch	6
Braintrust Group	136	Sacred Heart University	4
CyberCoders	119	General Dynamics	3
Capital One	93	ADP	2
Apple	81	Activision Blizzard	2
Jobot	77	Air Mobility Command	2

Employer	Bay	Employer	North Bay
Google	61	Another Source	2

Source: Lightcast

## Educational Supply

There are 13 community colleges in the Bay Region issuing 182 awards on average annually (last 3 years ending 2019-20) on TOP 1030.00 - Graphic Art and Design. In the North Bay Sub-Region, there are three (3) community colleges that issued 25 awards on average annually (last 3 years) on this TOP code.

There are a six (6) other CTE educational institutions in the Bay Region issuing 73 awards on average annually (last 3 years ending 2019-20) on CIP 50.04 – Graphic Design. There are two (2) other CTE educational institution in the North Bay Sub-Region issuing seven (7) awards on average annually (last 3 years) on this TOP 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
De Anza	Silicon Valley	11	5	8	24
Diablo Valley	East Bay	7	2	0	9
Foothill	Silicon Valley	19	5	2	26
Laney	East Bay	5	5	1	11
Las Positas	East Bay	3	0	2	5
Los Medanos	East Bay	10	2	0	12
Marin	North Bay	0	0	1	1
Mission	Silicon Valley	12	5	0	17
Monterey	SC-Monterey	5	1	1	7
Napa	North Bay	6	0	0	6
Ohlone	East Bay	2	0	0	2
San Francisco	Mid-Peninsula	9	6	29	44
Santa Rosa	North Bay	5	7	6	18
<b>Total</b>		<b>94</b>	<b>38</b>	<b>50</b>	<b>182</b>

Source: Data Mart

Note: The annual average for awards is 2017-18 to 2019-20.

**Table 7b. Other CTE Institutions Awards on CIP 50.04 – Graphic Design in Bay Region**

College	Subregion	Associate Degree	Bachelor's degree	Total
California College of the Arts	Mid-Peninsula	0	35	35
Dominican University of California	North Bay	0	4	4
FIDM-Fashion Institute of Design & Merchandising-San Francisco	Mid-Peninsula	3	0	3
Notre Dame de Namur University	Mid-Peninsula	0	3	3
Pacific Union College	North Bay	0	3	3
San Jose State University	Silicon Valley	0	25	25
<b>Total</b>		<b>3</b>	<b>70</b>	<b>73</b>

Source: Data Mart

Note: The annual average for awards is 2017-18 to 2019-20.

## Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 2,541 annual openings for the Digital Media Arts occupational cluster and 255 annual (3-year average) awards for an annual undersupply of 2,286 students. In the North Bay Sub-Region, there is also a gap with 141 annual openings and 32 annual (3-year average) awards for an annual undersupply of 109 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 Programs	Solano All CTE Programs	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%	67%	58%	65%	70%	N/A
Median Annual Earnings for SWP Exiting Students	\$48,926	\$33,528	\$27,204	\$34,774	\$27,737	\$24,527
Median Change in Earnings for SWP Exiting Students	23%	27%	28%	22%	47%	59%
Exiting Students Who Attained the Living Wage	50%	49%	31%	32%	29%	N/A

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

## Skills, Certifications and Education

**Table 9. Top Skills for Digital Media Arts Occupations in Bay Region (Mar. 2022 - Feb. 2023)**

Skill	Posting	Skill	Posting
User Experience (UX)	1,200	Agile Methodology	673
JavaScript (Programming Language)	1,111	Figma (Design Software)	598
React.js	921	Marketing	544
Product Design	897	User Experience (UX) Design	538
Cascading Style Sheets (CSS)	877	Application Programming Interface (API)	521
User Interface (UI)	778	Software Engineering	517
Computer Science	766	Node.js	498
Prototyping	764	Front End Design	489
Front End (Software Engineering)	701	Wireframing	473
HyperText Markup Language (HTML)	688	Amazon Web Services	472

Source: Lightcast

**Table 10. Certifications for Digital Media Arts Occupations in Bay Region (Mar. 2022 - Feb. 2023)**

Certification	Posting	Certification	Posting
Security Clearance	26	Project Management Professional Certification	5
Enterprise Desktop Administrator (Microsoft Certified IT Professional)	20	Top Secret-Sensitive Compartmented Information (TS/SCI Clearance)	5
Master of Business Administration (MBA)	20	Agile Certification	4
Valid Driver's License	20	AWS Certified Solutions Architect	4
Product Certification	6	Certified Scrum Master	4
Secret Clearance	6	SAP Certification	4
Certified Safety Professional	5	Six Sigma Green Belt	4

Source: Lightcast

**Table 11. Education Requirements for Digital Media Arts Occupations in Bay Region**

Education Level	Job Postings	% of Total
High school or GED	88	3%
Associate degree	52	2%
Bachelor's degree & higher	2,666	95%

Source: Lightcast

Note: 53% 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 CCCCO 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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