

ARTS, MEDIA, AND ENTERTAINMENT

Examining Labor Market Need, Valued Skills, and Compatible Jobs

SAN DIEGO-IMPERIAL

AUGUST 2023



TABLE OF CONTENTS

Executive Summary	3
Introduction.....	4
Skills in Job Postings and Worker Profiles.....	6
Labor Market Information	10
Supply Gap Analysis.....	14
Jobs Compatible with <i>AME</i> Skills	15
Findings and Recommendations.....	19
Appendix A: Tables.....	21
Appendix B: Methodology	51
Acknowledgments and Disclaimers	52



EXECUTIVE SUMMARY

The Center of Excellence (COE) for San Diego and Imperial Counties Community Colleges commissioned Mod Research Consulting to evaluate information about 25 *Arts, Media, and Entertainment (AME) Occupations*. The goals of this study were to: 1) identify the skills that are most relevant for *AME Occupations*; 2) determine whether a supply gap¹ exists for these occupations in the San Diego-Imperial region; and 3) explore compatible, high-demand² and high-wage³ occupations for which individuals with Arts, Media, and Entertainment knowledge, training, and skills could qualify in the region.

An analysis of online job postings for *AME Occupations* revealed that the top specialized skills were “marketing,” “graphic design,” and “photography;” the top soft skills were “communication,” “detail-oriented,” and “customer service;” and the top software skills were “Adobe Photoshop,” “Adobe Illustrator,” and “Adobe InDesign.” Self-reported data from online resumé and profiles of workers employed in *AME Occupations* confirmed that many of the skills requested by employers are similarly important among workers currently in the field. Therefore, K12, adult education, and community college institutions should ensure that students in Arts, Media, and Entertainment programs have these foundational skills.

Next, a supply gap analysis using labor market demand (i.e., annual job openings) and educational supply (i.e., degrees awarded) revealed an oversupply of 1,563 workers in the region, and only seven of the 25 *AME Occupations* met the criteria of being both high-demand and high-wage. This suggests that while a large number of students complete Arts, Media, and Entertainment programs, employment opportunities are limited in occupations that are directly related to training provided by these programs. To address this challenge, this report identified 29 occupations in San Diego County and 20 occupations in Imperial County that are highly compatible⁴ with *AME Occupations* because they require similar skills, knowledge, and training. K12, adult education, and community college institutions could use this information to promote promising, alternative career opportunities for students in Arts, Media, and Entertainment pathways and programs. The COE encourages the San Diego and Imperial Counties Community Colleges to use this study for meaningful discussions and collaborations with K12, adult education, and industry partners in the Arts, Media, and Entertainment field.

¹ A supply gap suggests that there is more demand than supply in the labor market. Demand is measured by annual job openings and supply is measured by the three-year average of annual degrees awarded (certificates, degrees).

² High-demand = 50 or more annual job openings in San Diego County and 10 or more in Imperial County.

³ High-wage = At or above the living wage of \$18.43 in San Diego County and \$15.24 in Imperial County.

⁴ Compatible occupations are those that had a Compatibility Index score of 80 or above with the 25 *AME Occupations* in this study; higher scores indicate higher compatibility in terms of knowledge, skills, and training.

INTRODUCTION

Arts, Media, and Entertainment is the largest Career Technical Education (CTE) K12 sector in California, serving over 230,000 high school students across the state.⁵ K12 pathways are programs designed to prepare high school students for careers in different industry sectors, and provide foundational training to a range of postsecondary opportunities and programs. In the San Diego-Imperial region, Arts, Media, and Entertainment comprises approximately 36 percent of all high school career education courses taught in regional high schools, and also represents the largest number of course offerings across the 15 sectors in the K12 system.⁶

Given the sizable representation of this sector in the region, the Center of Excellence (COE) for San Diego and Imperial Counties Community Colleges commissioned Mod Research Consulting to analyze labor market information for 25 *Arts, Media, and Entertainment (AME) Occupations* to determine whether a supply gap⁷ for these occupations exists in the region (Exhibit 1) Definitions for these occupations are in the Appendix A, Exhibit 14.⁸ Arts, Media, and Entertainment is also considered highly interdisciplinary, suggesting that this pathway provides training in skills that can be used in various jobs. To identify the most important and transferable skills, the research team analyzed online job postings data in the San Diego-Imperial region to determine the top skills that employers request for *AME Occupations*, as well as the top skills that workers in Arts, Media, and Entertainment frequently include in their online resumé and profiles. The research team also analyzed labor market information and Compatibility Index⁹ scores to identify high-demand¹⁰ and high-wage¹¹ compatible occupations that require similar Arts, Media, and Entertainment training, knowledge, and skills to perform those jobs.

The specific research goals of this study were to:

- 1 Identify the skills that are most relevant for *AME Occupations*
- 2 Determine whether a supply gap exists for *AME Occupations* in the San Diego-Imperial region
- 3 Explore high-demand and high-wage occupations that are compatible with *AME Occupations*

⁵ "Arts, Media, and Entertainment Industry Sector," cde.ca.gov/ci/ct/gi/ameindustrysector.asp.

⁶ "San Diego Imperial Pathway Mapping and Gap Analysis," WestEd.

⁷ A supply gap suggests that there is more demand than supply in the labor market. Demand is measured by annual job openings and supply is measured by the three-year average of annual degrees awarded (certificates, degrees).

⁸ This list is not exhaustive of all occupations trained by Arts, Media, and Entertainment programs, but represent occupations often associated with *Arts, Media, and Entertainment*. For more information, see Appendix B: Methodology.

⁹ The Compatibility Index is a number calculated by Lightcast that is intended to score the compatibility of occupations in terms of the knowledge, skills, and abilities they require. A score of 100 means complete compatibility, while a score of 0 means no compatibility. This number is created by Lightcast's algorithm and O*NET's data on the required levels and importance of competencies. kb.emsidata.com/glossary/occupational-compatibility-index/

¹⁰ High-demand = 50 or more annual job openings in San Diego County and 10 or more in Imperial County.

¹¹ High-wage = At or above the living wage of \$18.43 in San Diego County and \$15.24 in Imperial County.

This report summarizes data on the *AME Occupations* in Exhibit 1 in the following sections.

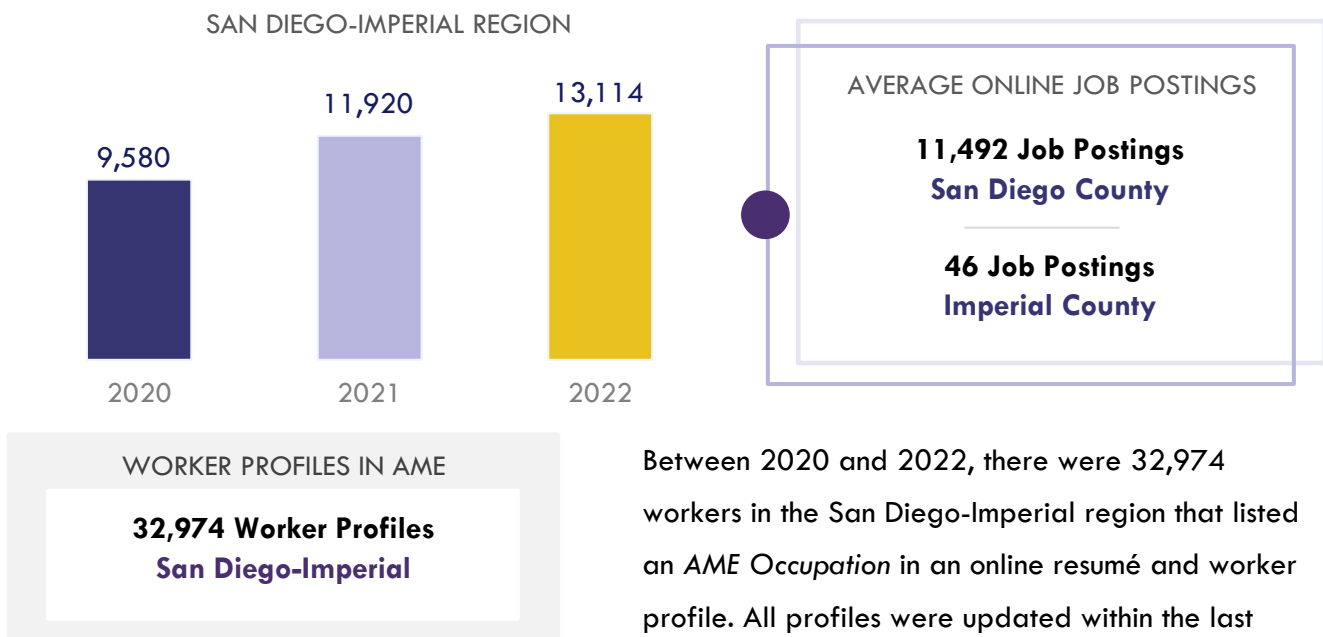
Exhibit 1. 25 AME Occupations - Standard Occupational Classification (SOC) Codes and Titles

SOC Code and Occupational Title	
27-2011	Actors
27-1011	Art Directors
27-1019	Artists and Related Workers
27-4011	Audio and Video Technicians
27-3011	Broadcast Announcers and Radio Disc Jockeys
27-4012	Broadcast Technicians
27-4031	Camera Operators, Television, Video, and Film
27-2032	Choreographers
27-1012	Craft Artists
27-2031	Dancers
27-2091	Disc Jockeys, Except Radio
27-4032	Film and Video Editors
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators
27-1024	Graphic Designers
27-4015	Lighting Technicians
39-5091	Makeup Artists, Theatrical and Performance
27-3099	Media and Communication Workers
27-2041	Music Directors and Composers
27-2042	Musicians and Singers
27-4021	Photographers
27-2012	Producers and Directors
27-1027	Set and Exhibit Designers
27-4014	Sound Engineering Technicians
27-1014	Special Effects Artists and Animators
15-1255	Web and Digital Interface Designers

SKILLS IN JOB POSTINGS AND WORKER PROFILES

Between 2020 and 2022, there was an average of 11,538 online job postings per year for AME Occupations in the San Diego-Imperial region, which is less than one percent of all online job postings in the region (Exhibit 2). (On average, the region had 1.7 million postings during the same time period). The majority of job postings were concentrated in San Diego County with an average of 11,492 job postings, whereas Imperial County had an average of 46 job postings. Online job postings can provide insight about recent changes in the labor market that are not captured by historical data, which is known as “traditional labor market information.” While this report includes online jobs postings data to help with curriculum development, the community colleges should note that this type of data is impacted by several variables: employers may post a position multiple times to increase the pool of applicants; a job posting can remain posted after a business decides not to fill a position; or an employer may use one posting to fill multiple positions, for example.

Exhibit 2. Online Jobs Postings for AME Occupations, San Diego-Imperial (2020-2022)



Between 2020 and 2022, there were 32,974 workers in the San Diego-Imperial region that listed an AME Occupation in an online resumé and worker profile. All profiles were updated within the last three years, and profiles represent workers of all education and experience levels. In subsequent sections, the top skills listed by employers in online job postings are analyzed and compared to the percentage of workers that listed those skills in online resumé and worker profiles.



Exhibit 3 displays the top specialized skills in online job postings, and the percentage of worker profiles that listed each skill. The top specialized skills in online job postings were “marketing,” “graphic design,” and “photography.” Similarly, workers in *AME Occupations* most commonly listed “graphic design,” “marketing,” and “photography” in their online profiles.

Exhibit 3. Specialized Skills in Job Postings and Worker Profiles, San Diego-Imperial (2020-2022)

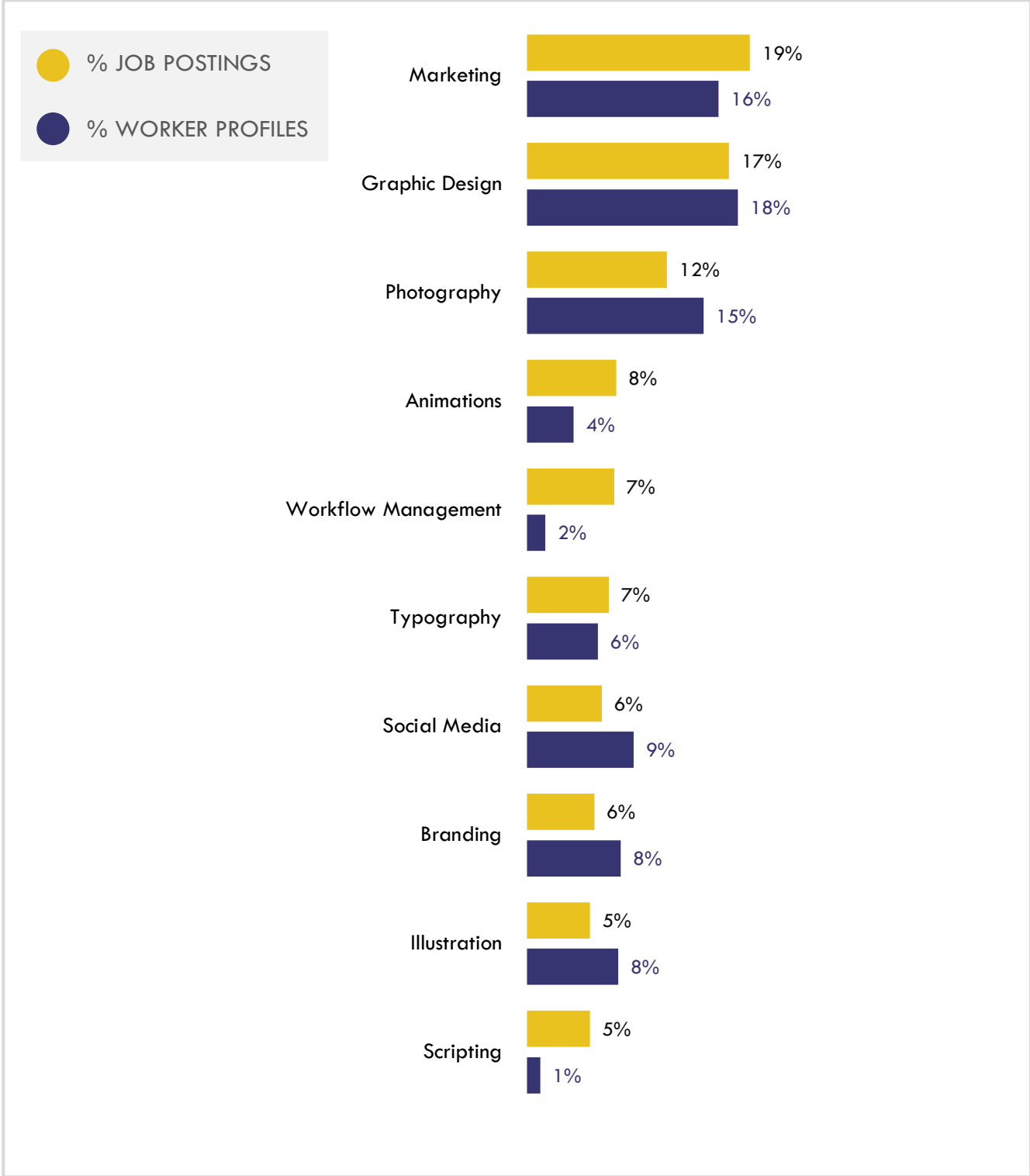


Exhibit 4 displays the top soft skills in online job postings, and the percentage of worker profiles that listed each skill. Employers in the region listed the top soft skills in online job postings as “communication,” “detail-oriented,” and “customer service.” The top skills listed by workers in *AME Occupations* were “customer service,” “sales,” and “management.”

Exhibit 4. Soft Skills in Job Postings and Worker Profiles, San Diego-Imperial (2020-2022)

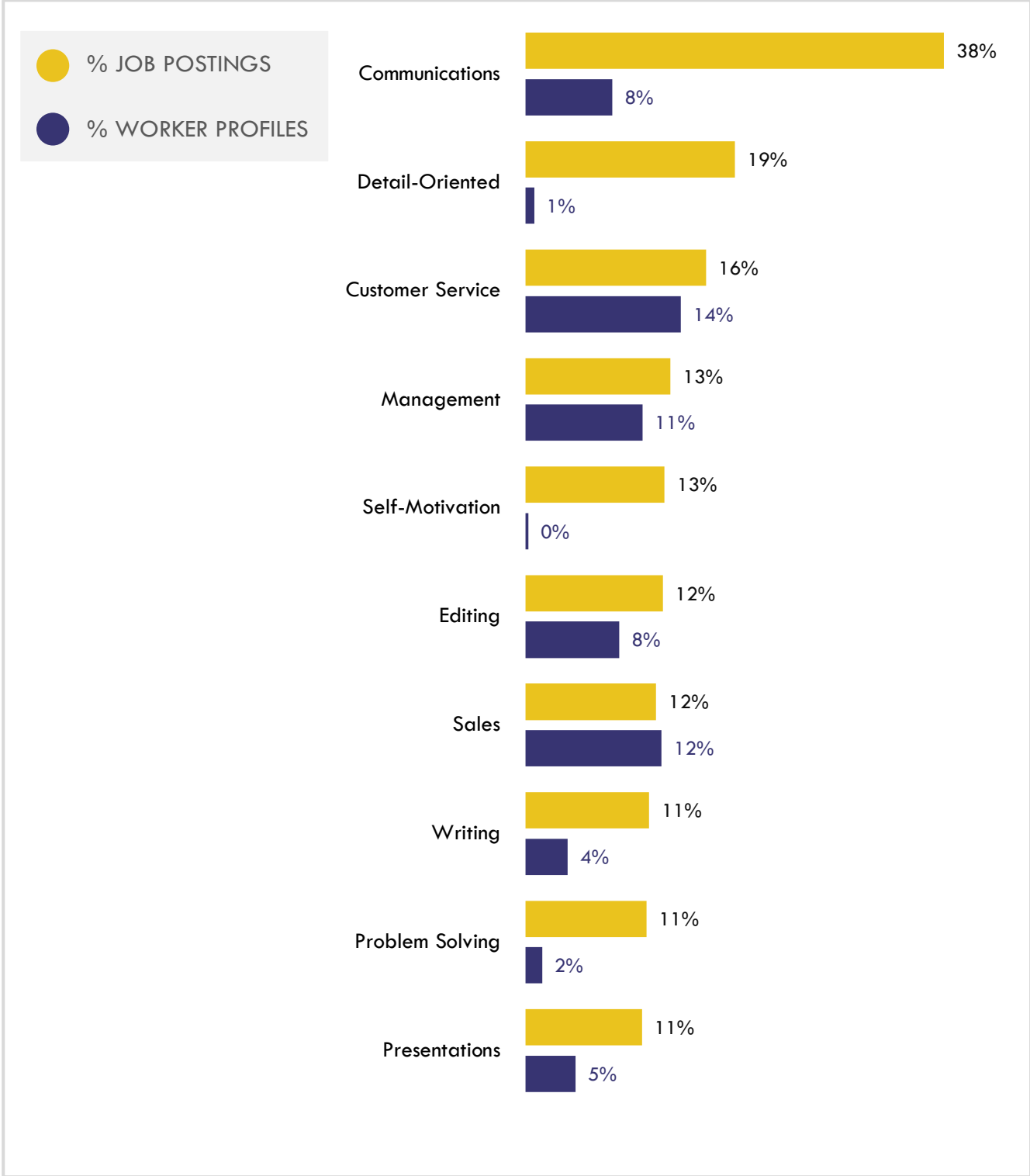
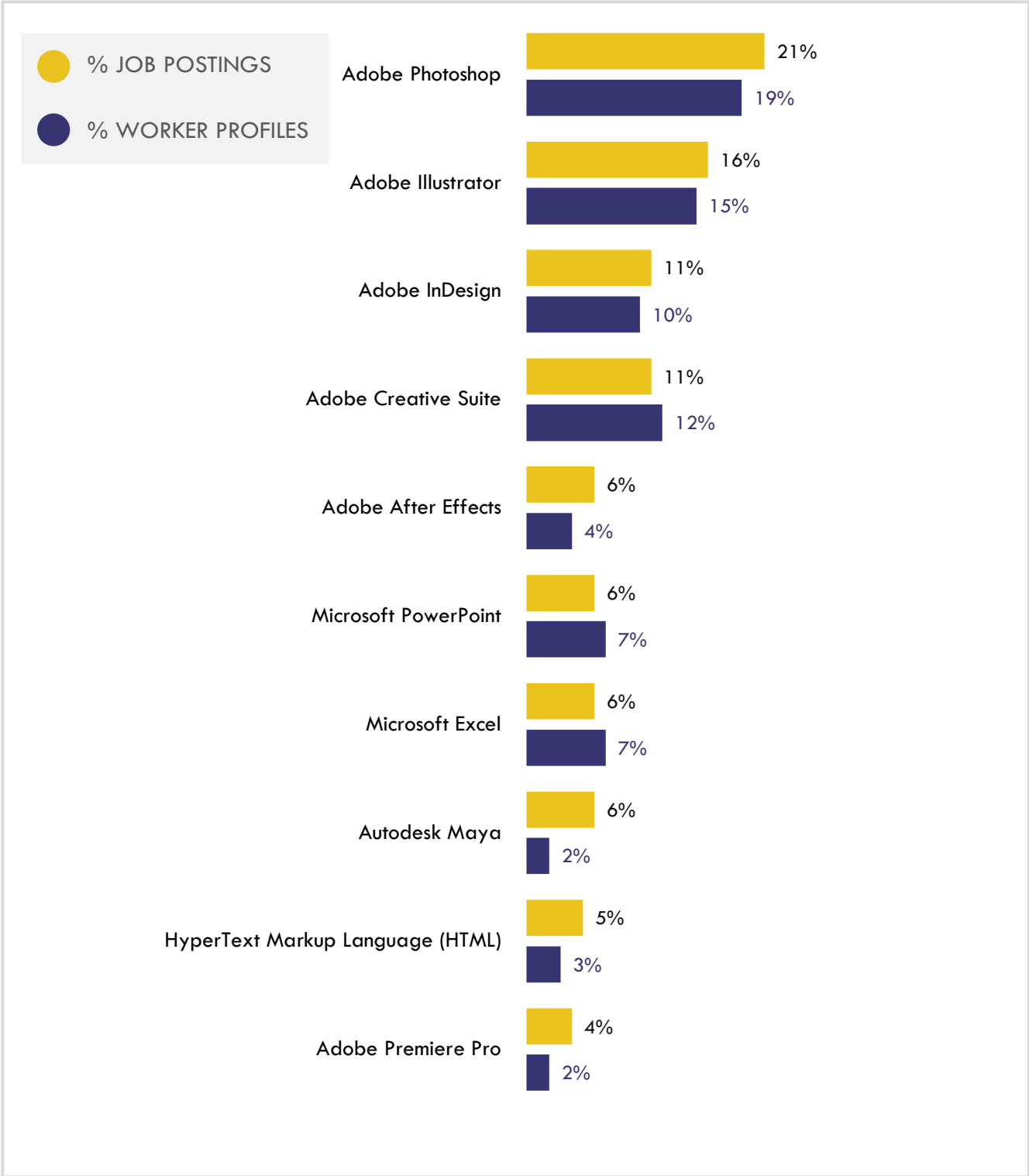


Exhibit 5 displays the top software skills in online job postings, and the percentage of worker profiles that listed each skill. Employers in the region listed the top software skills in online job postings as “Adobe Photoshop,” “Adobe Illustrator,” and “Adobe InDesign.” The top skills listed by workers in AME Occupations were also “Adobe Photoshop,” “Adobe Illustrator,” and “Adobe Creative Suite.”

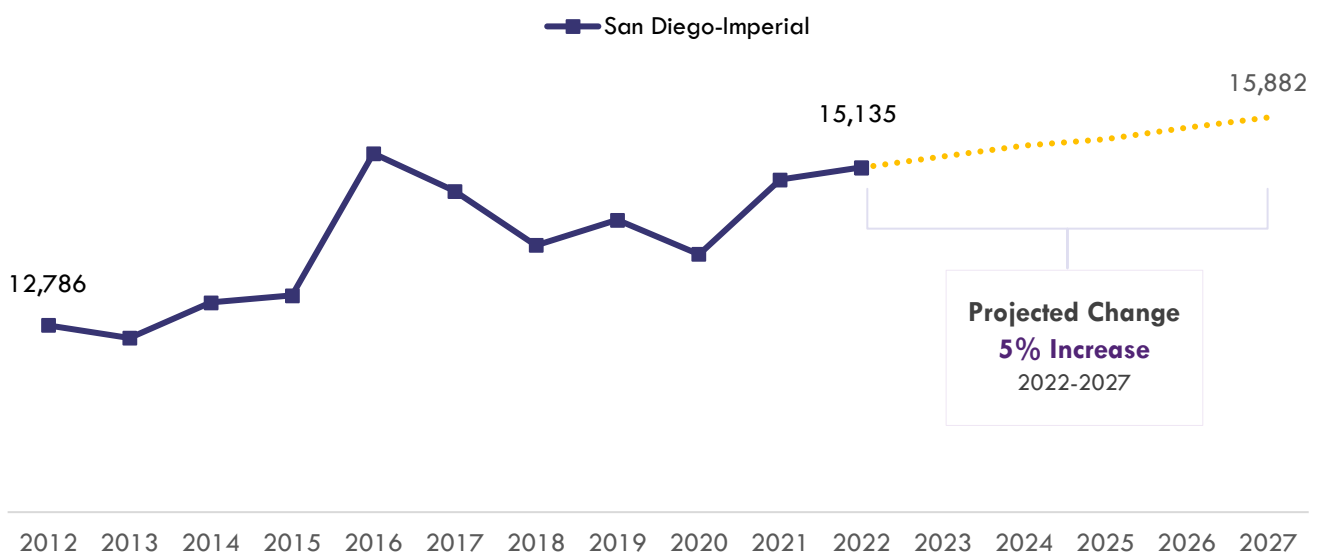
Exhibit 5. Software Skills in Job Postings and Worker Profiles, San Diego-Imperial (2020-2022)



LABOR MARKET INFORMATION

To better understand trends and occupational data for *AME Occupations* in the San Diego-Imperial region, the research team analyzed traditional labor market information. Data showed that the number of jobs for *AME Occupations* has fluctuated over the past decade, but is projected to increase by 747 net jobs or five percent between 2022 and 2027 (Exhibit 6). Please note that number of jobs is not equivalent to labor market demand. Demand is measured by annual job openings.

Exhibit 6. Total Number of AME Jobs, San Diego-Imperial (2012-2027)



In terms of labor market demand between 2022 and 2027, data shows that employers in the region will need to hire 1,878 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example. To identify *AME Occupations* that are high-demand and high-wage jobs, the research team analyzed annual job openings (i.e., demand) and entry-level wages. A high-demand, high-wage occupation met the criteria for both defined below.

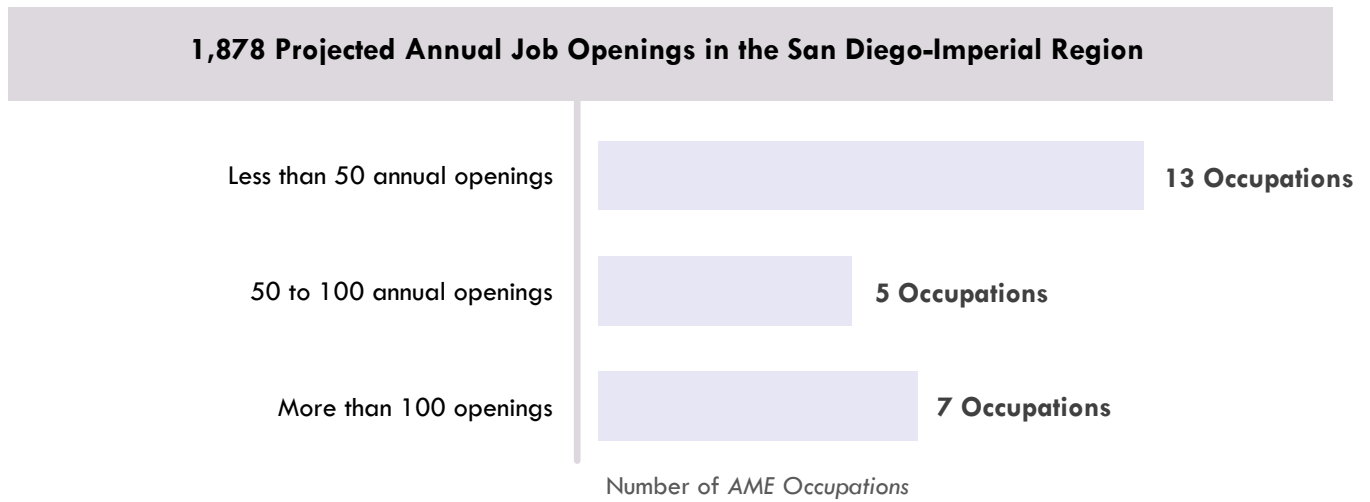
- > *High-demand* occupations have at least 50 annual job openings in San Diego County¹² and 10 annual job openings in Imperial County
- > *High-wage* occupations have entry-level earnings above the living wage, which is \$18.43 per hour¹³ in San Diego County and \$15.24 per hour in Imperial County¹⁴

¹² High-wage definition of *priority jobs*. "Equity Gaps in Priority Jobs and Programs," Center of Excellence (COE) for the San Diego and Imperial Counties Community Colleges. coecc.net/san-diego-imperial/2023/02/equity-gaps-in-priority-jobs-and-programs.

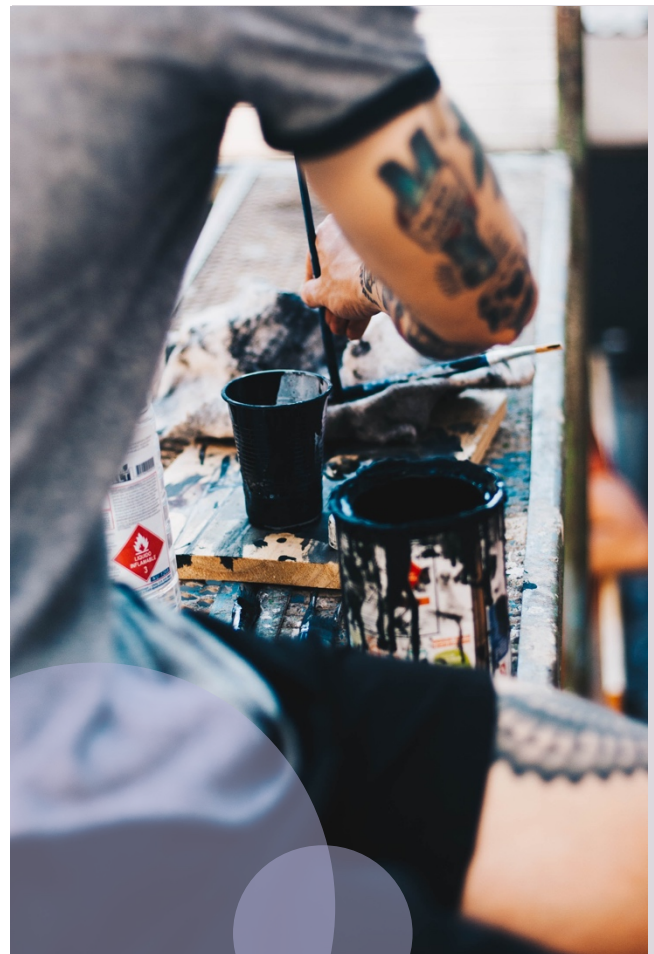
¹³ The living wage for a single adult in San Diego County. "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.org/family-needs-calculator.

¹⁴ The living wage for a household of two adults and two school-age children in Imperial County. "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.org/family-needs-calculator.

Exhibit 7. Projected Annual Openings for the 25 AME Occupations, San Diego-Imperial (2022-2027)



Across the San Diego-Imperial region, more than half (13 occupations) of AME Occupations were projected to have less than 50 annual job openings between 2022 and 2027 (Exhibit 7). When analyzing demand by county, 12 occupations met the criteria of a high-demand occupation in San Diego County, and no occupation met the criteria in Imperial County. In terms of entry-level wages, 12 occupations earn above the living wage in San Diego County, which is \$18.43 per hour,¹⁵ while 16 earn above the living wage in Imperial County, which is \$15.24 per hour.¹⁶ Seven occupations met the criteria of a high-demand, high-wage occupation in San Diego County, while none met the criteria in Imperial County. For a breakdown of regional demand and entry-level wages by county, see Exhibit 8. For demand by county, see Appendix A, Exhibit 15 and Exhibit 16.



¹⁵ The living wage for a single adult in San Diego County. "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.org/family-needs-calculator.

¹⁶ The living wage for a household of two adults and two school-age children in Imperial County. "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.org/family-needs-calculator.

Exhibit 8 shows the 25 AME Occupations by the typical entry-level education, projected annual job openings, and entry-level wages. In terms of education, 11 occupations require a bachelor's degree or higher at entry, and nine require a high school diploma or less. Please note that the Employment Development Department (EDD) calculates wages using a mean wage and "year-round, full-time" estimates of hours worked; thus, hourly wages may not represent hourly pay received by employees.¹⁷ Some occupations also include a high representation of self-employed individuals, or those who report a significant portion of their income from self-employment, and these wages may be below the minimum wage when annualized.¹⁸

Exhibit 8. Typical Entry-Level Education, Annual Job Openings, and Entry-Level Wages, San Diego-Imperial (2022-2027)

SOC Code	Occupational Title	San Diego-Imperial	San Diego County		Imperial County	
		Annual Job Openings	Entry-Level Wages	Median Wages	Entry-Level Wages	Median Wages
Typical Entry-Level Education: Bachelor's Degree or Higher						
27-1024	Graphic Designers	269	\$22.12*	\$29.18	\$14.59	\$19.11
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	135	\$4.80	\$12.05	\$18.44*	\$26.01
27-2012	Producers and Directors	129	\$23.48*	\$36.80	\$21.62*	\$29.67
15-1255	Web and Digital Interface Designers	112	\$28.56*	\$39.71	\$32.72*	\$45.45
27-1011	Art Directors	85	\$22.87*	\$41.05	\$11.86	\$34.25
27-2041	Music Directors and Composers	53	\$14.49	\$19.53	\$15.46*	\$26.13
27-1014	Special Effects Artists and Animators	51	\$18.58*	\$32.20	\$9.55	\$24.67
27-4032	Film and Video Editors	38	\$23.20*	\$23.89	\$28.54*	\$35.33
27-3011	Broadcast Announcers and Radio Disc Jockeys	34	\$14.32	\$23.20	\$14.96	\$21.36
27-4031	Camera Operators, Television, Video, and Film	25	\$20.32*	\$28.39	\$26.26*	\$29.73
27-1027	Set and Exhibit Designers	13	\$15.94	\$22.93	\$10.00	\$20.66

*Entry-level wage is above the living wage

¹⁷ labormarketinfo.edd.ca.gov/oes-survey-methodology.html

¹⁸ For example, a Fine Artist earns \$10,000/year from selling art goods, and this figure is then annualized by dividing by 2080 hours (i.e., 40 hrs. per week), which would result in hourly wage estimates of \$4.80.

SOC Code	Occupational Title	San Diego-Imperial	San Diego County		Imperial County	
		Annual Job Openings	Entry-Level Wages	Median Wages	Entry-Level Wages	Median Wages
Typical Entry-Level Education: Associate Degree						
27-4012	Broadcast Technicians	27	\$14.28	\$14.73	\$23.21*	\$24.08
Typical Entry-Level Education: Postsecondary Non-degree Award/Some College, No Degree						
27-2011	Actors	114	\$22.66*	\$27.96	\$20.54*	\$26.90
27-4011	Audio and Video Technicians	87	\$22.24*	\$23.50	\$20.45*	\$26.11
27-4014	Sound Engineering Technicians	11	\$23.77*	\$30.17	\$24.82*	\$28.09
39-5091	Makeup Artists, Theatrical and Performance	4	\$37.50*	\$70.72	\$48.73*	\$78.94
Typical Entry-Level Education: High School Diploma or Equivalent						
27-4021	Photographers	267	\$14.51	\$25.23	\$15.85*	\$20.19
27-3099	Media and Communication Workers	46	\$27.20*	\$36.21	\$28.17*	\$31.02
27-2032	Choreographers	14	\$15.40	\$15.42	N/A	N/A
27-4015	Lighting Technicians	10	\$18.39	\$20.90	\$16.48*	\$21.94
Typical Entry-Level Education: No Formal Credential						
27-2042	Musicians and Singers	235	\$15.97	\$29.61	\$20.88*	\$37.14
27-1012	Craft Artists	65	\$2.89	\$7.40	\$2.63	\$7.16
27-2031	Dancers	21	\$15.41	\$20.45	N/A	N/A
27-1019	Artists and Related Workers	18	\$9.18	\$25.37	\$18.04*	\$28.10
27-2091	Disc Jockeys, Except Radio	15	\$14.31	\$24.16	\$14.55	\$21.11
San Diego-Imperial Total Annual Openings		1,878				

*Entry-level wage is above the living wage
 "N/A" indicates data is not available

SUPPLY GAP ANALYSIS

A supply gap analysis compares labor demand (i.e., annual openings) with educational supply (i.e., degrees awarded). Educational supply for an occupation can be estimated by analyzing the number of awards related to Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. There are 32 TOP codes and 88 CIP codes that train for *AME Occupations* (see Appendix A, Exhibit 17 for the full list). According to TOP and CIP data, 10 community colleges and 29 non-community-college institutions supply the region with 3,441 awards for *AME Occupations* (Exhibit 9). For the full list of the institutions by TOP codes and CIP codes, see Appendix A, Exhibit 18 and Exhibit 19. Exhibit 20 in Appendix A summarizes the number of awards by award type, showing that most degrees awarded were bachelor’s degrees (1,244 degrees) and noncredit awards (659 degrees).

Exhibit 9. Degrees Awarded by Institution Type, San Diego-Imperial (PY 2018-19 to 2020-21)¹⁹

Community College Institution	3-Year Annual Average Awards
San Diego College of Continuing Education	659
San Diego City College	170
MiraCosta College	168
Grossmont College	133
Southwestern College	118
Palomar College	110
San Diego Mesa College	87
Imperial College	38
Cuyamaca College	31
San Diego Miramar College	23
Community College Institutions Total	1,537
Non-Community-College Institutions Total	1,904



A supply gap analysis suggests that there is an oversupply of 1,563 in the San Diego-Imperial region for *AME Occupations* (Exhibit 10), suggesting that more individuals are being trained for *AME* jobs than there are jobs available.

Exhibit 10. Supply Gap Comparing Demand (Annual Openings) vs. Supply (Annual Awards)²⁰

	Demand (Annual Openings)	Supply (Annual Awards)	Oversupply
San Diego County	1,853	3,403	-1,550
Imperial County	25	38	-13
San Diego-Imperial Total			-1,563

¹⁹ A conservative estimate of program supply was used and only the number of awards from TOP and CIP codes included in Exhibit 17 was used. Program awards include associate degrees, certificates, postsecondary non-degree awards, and bachelor’s degrees.

²⁰ “Supply and Demand Tables,” Centers of Excellence for Labor Market Research, coecc.net/our-resources.

JOBS COMPATIBLE WITH AME SKILLS

Given that there are limited high-demand, high-wage *AME Occupations* and that an oversupply for these occupations exists in the region, this report provides information about compatible occupations that require similar skills, knowledge, and training to *AME Occupations*, but that are high-demand (i.e., more than 50 annual job openings in San Diego County and 10 annual openings in Imperial County) and high-wage jobs (i.e., more than the living wage at entry). Exhibit 11 features 29 high-demand, high-wage jobs in San Diego County that have an average Compatibility Index score of 80 or above (out of 100), suggesting high compatibility with *AME Occupations*.²¹ For occupational definitions and the *AME Occupation* that is most compatible, see Appendix A, Exhibit 21.

Exhibit 11. AME Compatible Jobs and Compatibility Index Scores, San Diego County (2022-2027)

SOC Code	Occupational Title	Annual Job Openings	Entry-Level Wages	Median Wages	Compatibility Index Score ²²
Typical Entry-Level Education: Bachelor's Degree or Higher					
25-4022	Librarians and Media Collections Specialists	121	\$24.30	\$37.28	85
13-2053	Insurance Underwriters	78	\$30.28	\$46.94	84
13-1041	Compliance Officers	536	\$29.47	\$38.95	83
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	367	\$35.48	\$49.16	83
13-1011	Agents and Business Managers of Artists, Performers, and Athletes	53	\$21.40	\$31.50	82
13-2028	Property Appraisers and Assessors	69	\$23.39	\$32.25	82
11-3012	Administrative Services Managers	296	\$31.05	\$47.13	82
27-3041	Editors	106	\$21.85	\$30.12	81
25-2012	Kindergarten Teachers, Except Special Education	85	\$23.41	\$36.49	81
15-1212	Information Security Analysts	182	\$38.57	\$49.32	81
41-3031	Securities, Commodities, and Financial Services Sales Agents	489	\$23.17	\$29.57	80
Typical Entry-Level Education: Associate Degree					
23-2011	Paralegals and Legal Assistants	509	\$23.48	\$29.80	82
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	210	\$18.43	\$22.85	81

²¹ The Compatibility Index is a number calculated by Lightcast that is intended to score the compatibility of occupations in terms of the knowledge, skills, and abilities they require. A score of 100 means complete compatibility, while a score of 0 means no compatibility. This number is created by Lightcast's algorithm and O*NET's data on the required levels and importance of competencies. kb.emsidata.com/glossary/occupational-compatibility-index/.

²² The Compatibility Index scores use an average of compatibility with all *AME Occupations* for which compatibility information was available. All Compatibility Index scores of 80 or above that meet the criteria of high-demand and high-wage are reported. For more details about the methodology, see Appendix B: Methodology.

SOC Code	Occupational Title	Annual Job Openings	Entry-Level Wages	Median Wages	Compatibility Index Score ²²
29-1292	Dental Hygienists	205	\$47.73	\$47.80	80
Typical Entry-Level Education: Postsecondary Non-Degree					
31-9097	Phlebotomists	209	\$18.51	\$22.67	82
Typical Entry-Level Education: High School Diploma or Equivalent					
43-5061	Production, Planning, and Expediting Clerks	619	\$19.36	\$23.58	84
43-6011	Executive Secretaries and Executive Administrative Assistants	570	\$28.96	\$35.22	83
43-4061	Eligibility Interviewers, Government Programs	292	\$19.02	\$23.14	83
39-1013	First-Line Supervisors of Gambling Services Workers	85	\$23.42	\$28.87	83
29-2081	Opticians, Dispensing	80	\$18.81	\$23.50	83
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,119	\$22.36	\$29.94	82
41-3021	Insurance Sales Agents	739	\$18.48	\$28.61	82
43-4031	Court, Municipal, and License Clerks	98	\$20.12	\$23.76	82
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,699	\$23.44	\$29.75	81
43-6012	Legal Secretaries and Administrative Assistants	435	\$22.81	\$22.86	81
17-3031	Surveying and Mapping Technicians	79	\$28.31	\$29.24	81
43-3061	Procurement Clerks	72	\$18.97	\$23.23	81
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	673	\$18.83	\$23.86	80
33-9093	Transportation Security Screeners	100	\$23.88	\$24.27	80



Exhibit 12 features 20 compatible jobs with *AME Occupations* that are high-demand (i.e., more than 10 annual job openings), high-wage jobs in Imperial County (i.e., pay entry-level wages at or above \$15.24 per hour).

Exhibit 12. AME Compatible Jobs and Compatibility Index Scores, Imperial County (2022-2027)

SOC Code	Occupational Title	Annual Job Openings	Entry-Level Wages	Median Wages	Compatibility Index Score ²³
Typical Entry-Level Education: Bachelor's Degree					
13-1041	Compliance Officers	62	\$29.33	\$45.37	83
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	15	\$25.40	\$43.56	83
Typical Entry-Level Education: Associate Degree					
31-9091	Dental Assistants	18	\$17.32	\$22.30	81
Typical Entry-Level Education: Postsecondary Non-degree Award					
31-9097	Phlebotomists	12	\$17.35	\$18.21	82
Typical Entry-Level Education: Some College, No Degree					
43-3031	Bookkeeping, Accounting, and Auditing Clerks	87	\$16.77	\$18.35	81
Typical Entry-Level Education: High School Diploma or Equivalent					
25-3021	Self-Enrichment Teachers	17	\$18.44	\$31.05	86
43-5061	Production, Planning, and Expediting Clerks	15	\$18.14	\$23.77	84
43-5032	Dispatchers, Except Police, Fire, and Ambulance	14	\$17.72	\$22.61	84
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	83	\$17.27	\$21.46	83
43-4061	Eligibility Interviewers, Government Programs	18	\$22.82	\$22.82	83
43-6011	Executive Secretaries and Executive Administrative Assistants	11	\$23.93	\$29.26	83
41-1011	First-Line Supervisors of Retail Sales Workers	82	\$17.14	\$18.14	82
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	48	\$22.36	\$29.47	82
29-2052	Pharmacy Technicians	19	\$17.53	\$21.22	82
41-3021	Insurance Sales Agents	15	\$17.48	\$21.28	82
43-4031	Court, Municipal, and License Clerks	11	\$18.23	\$19.78	82

²³ The Compatibility Index is a number calculated by Lightcast that is intended to score the compatibility of occupations in terms of the knowledge, skills, and abilities they require: a score of 100 means complete compatibility, while a score of 0 means no compatibility. This number is created by Lightcast's algorithm and O*NET's data on the required levels and importance of competencies. kb.emsdata.com/glossary/occupational-compatibility-index/

SOC Code	Occupational Title	Annual Job Openings	Entry-Level Wages	Median Wages	Compatibility Index Score ²³
43-1011	First-Line Supervisors of Office and Administrative Support Workers	65	\$22.28	\$28.30	81
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	85	\$15.29	\$17.24	80
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	35	\$18.50	\$23.42	80
33-9093	Transportation Security Screeners	19	\$26.10	\$35.03	80

Exhibit 13 features 12 compatible jobs that met the criteria for high-wage, high-demand occupations in San Diego County and Imperial County.

Exhibit 13. High-Demand, High-Wage Compatible Jobs in Both San Diego and Imperial Counties

SOC Code	Occupational Title	Compatibility Index Score
Typical Entry-Level Education: Bachelor's Degree		
13-1041	Compliance Officers	83
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	83
Typical Entry-Level Education: Postsecondary Non-degree Award		
31-9097	Phlebotomists	82
Typical Entry-Level Education: High School Diploma or Equivalent		
43-5061	Production, Planning, and Expediting Clerks	84
43-4061	Eligibility Interviewers, Government Programs	83
43-6014	Executive Secretaries and Executive Administrative Assistants	83
43-4031	Court, Municipal, and License Clerks	82
41-3021	Insurance Sales Agents	82
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	82
43-1011	First-Line Supervisors of Office and Administrative Support Workers	81
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	80
33-9093	Transportation Security Screeners	80

FINDINGS AND RECOMMENDATIONS

The purpose of this report was to 1) identify the top skills for *AME Occupations*; 2) determine whether a supply gap exists for these occupations in the San Diego-Imperial region (i.e., compare annual job openings with annual awards); and 3) explore compatible high-demand occupations that pay at or above the living wage at entry. This section highlights key findings and recommendations.

Insight: Employers seek Arts, Media, and Entertainment skills that are consistent with skills that workers value in their profiles and resumés.

Exhibit 3, Exhibit 4, and Exhibit 5 summarize the top specialized, soft, and software skills that are requested by employers in online job postings,²⁴ and also summarize the percentage of workers that list these skills in their resumés and online profiles. Overall, the top specialized skills are “marketing,” “graphic design,” and “photography;” the top soft skills are “communication,” “detail-oriented,” and “customer service;” and the top software skills are “Adobe Photoshop,” “Adobe Illustrator,” and “Adobe InDesign.” Overall, results demonstrated that the top skills requested by employers are consistent with the skills listed by workers in *AME Occupations*, suggesting that these are important skills to emphasize in programs that train for these occupations. The regional community colleges and K12 institutions can utilize this information and ensure that curriculum focuses on training for these foundational skills.

Insight: A supply gap analysis revealed that there is an oversupply for *AME Occupations*, suggesting that employment opportunities are limited in occupations that are directly related to training in Arts, Media, and Entertainment.

The Career Technical Education (CTE) Model Curriculum Standards²⁵ state that an important aspect of an industry sector is also that the pathways must provide training that leads to *high-wage* or *high-demand* jobs. According to available labor market information and educational supply, *AME Occupations* have a labor market demand of 1,878 annual job openings and 39 institutions supply 3,441 awards for these occupations, suggesting there is a substantial oversupply in the region. In other words, more students are being trained for these positions than there are jobs available. In San Diego County, results showed that 13 occupations have fewer than 50 annual job openings and 13 occupations earn entry-level wages that are less than the living wage in San Diego County (i.e., \$18.43 per hour). In Imperial County, none are considered a high-demand occupation and nine earn less than the living wage in Imperial County (i.e., \$15.24 per hour). When comparing occupations that are high-

²⁴ To learn about different employability skills and examples, see the report “21st Century Employability Skills: A Labor Market Analysis of Soft Skills in San Diego County. myworkforceconnection.org/wp-content/uploads/2020/05/21st-Century-Employability-Skills-Soft-Skills-Study_2020-04-14.pdf

²⁵ “California Career Technical Education Model Curriculum Standards,” California Department of Education (CDE). cde.ca.gov/ci/ct/sf/documents/artsmedia.pdf

demand and earn above the living wage, only seven occupations in San Diego County met the criteria across the region. This demonstrates that not only is the labor market oversaturated with workers trained for these jobs, many of these occupations make less than the living wage in each county. As a result, this report encourages K12 educators to provide students entering these pathways with alternative career options that are considered highly compatible and require similar knowledge, training, and skills. K12 partners and community colleges can use the information presented in this report, along with the Equity Gaps in Priority Jobs and Programs²⁶ report published by the COE, to identify high-demand, high-wage jobs in the region.

Insight: There are 29 high-demand, high-wage AME compatible jobs in San Diego County and 20 in Imperial County that require similar AME skills, knowledge, and training.

The Arts, Media, and Entertainment pathway is considered interdisciplinary and provides students with transferable skills and training that can be applied to various types of careers.²⁷ To identify compatible occupations, the research team calculated average Compatibility Index scores across *AME Occupations*, and identified highly compatible occupations with scores of 80 or above (out of 100).²⁸ Results showed that there are 29 compatible occupations in San Diego County that are also considered high-demand, high-wage occupations, and 20 in Imperial County that also met that criteria. While K12 and community college programs may not directly train for these occupations, highly compatible jobs in which the levels and importance of skills, knowledge, and abilities are similar may provide insight into alternative career opportunities for students trained in Arts, Media, and Entertainment pathways and programs. Community colleges should also work with their high school partners to market these compatible professional opportunities as high-demand, high-wage opportunities in which students can leverage the same type of skills and knowledge.

CONCLUSION

The COE commissioned this study to encourage discussions and collaborations among the San Diego and Imperial Counties Community Colleges and K12 and industry partners. This study not only highlights AME skills valued by employers and workers, but also provides information about compatible jobs that can assist with career exploration of employment opportunities not typically considered by AME students.

²⁶ "Equity Gaps in Priority Jobs and Programs," Center of Excellence (COE) for the San Diego and Imperial Counties Community Colleges. coeccc.net/san-diego-imperial/2023/02/equity-gaps-in-priority-jobs-and-programs/

²⁷ cde.ca.gov/ci/ct/gi/ameindustrysector.asp

²⁸ The Compatibility Index is a number calculated by Lightcast that is intended to score the compatibility of occupations in terms of the knowledge, skills, and abilities they require. A score of 100 means complete compatibility, while a score of 0 means no compatibility. This number is created by Lightcast's algorithm and O*NET's data on the required levels and importance of competencies. kb.emsidata.com/glossary/occupational-compatibility-index/

APPENDIX A: TABLES

The following summarizes definitions for 25 AME Occupations. Please note that this list is not exhaustive of all occupations that are trained by Arts, Media, and Entertainment programs.

Exhibit 14. AME Occupations and O*NET Definitions

Occupational Title & SOC Code	O*NET Definition
Actors (27-2011)	Play parts in stage, television, radio, video, or film productions, or other settings for entertainment, information, or instruction. Interpret serious or comic role by speech, gesture, and body movement to entertain or inform audience. May dance and sing.
Art Directors (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 (27-1019)	All artists and related workers not listed separately.
Audio and Video Technicians (27-4011)	Set up, maintain, and dismantle audio and video equipment, such as microphones, sound speakers, connecting wires and cables, sound and mixing boards, video cameras, video monitors and servers, and related electronic equipment for live or recorded events, such as concerts, meetings, conventions, presentations, podcasts, news conferences, and sporting events.
Broadcast Announcers and Radio Disc Jockeys (27-3011)	Speak or read from scripted materials, such as news reports or commercial messages, on radio, television, or other communications media. May play and queue music, announce artist or title of performance, identify station, or interview guests.
Broadcast Technicians (27-4012)	Set up, operate, and maintain the electronic equipment used to acquire, edit, and transmit audio and video for radio or television programs. Control and adjust incoming and outgoing broadcast signals to regulate sound volume, signal strength, and signal clarity. Operate satellite, microwave, or other transmitter equipment to broadcast radio or television programs.
Camera Operators, Television, Video, and Film (27-4031)	Operate television, video, or film camera to record images or scenes for television, video, or film productions.
Choreographers (27-2032)	Create new dance routines. Rehearse performance of routines. May direct and stage presentations.
Craft Artists (27-1012)	Create or reproduce handmade objects for sale and exhibition using a variety of techniques, such as welding, weaving, pottery, and needlecraft.
Dancers (27-2031)	Perform dances. May perform on stage, for broadcasting, or for video recording.
Disc Jockeys, Except Radio (27-2091)	Play prerecorded music for live audiences at venues or events such as clubs, parties, or wedding receptions. May use techniques such as mixing, cutting, or sampling to manipulate recordings. May also perform as emcee (master of ceremonies).

Occupational Title & SOC Code	O*NET Definition
Film and Video Editors (27-4032)	Edit moving images on film, video, or other media. May work with a producer or director to organize images for final production. May edit or synchronize soundtracks with images.
Fine Artists, Including Painters, Sculptors, and Illustrators (27-1013)	Create original artwork using any of a wide variety of media and techniques.
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.
Lighting Technicians (27-4015)	Set up, maintain, and dismantle light fixtures, lighting control devices, and the associated lighting electrical and rigging equipment used for photography, television, film, video, and live productions. May focus or operate light fixtures, or attach color filters or other lighting accessories.
Makeup Artists, Theatrical and Performance (SOC 39-5091)	Apply makeup to performers to reflect period, setting, and situation of their role.
Media and Communication Workers, All Other (27-3099)	All media and communication workers not listed separately.
Music Directors and Composers (27-2041)	Conduct, direct, plan, and lead instrumental or vocal performances by musical artists or groups, such as orchestras, bands, choirs, and glee clubs; or create original works of music.
Musicians and Singers (27-2042)	Play one or more musical instruments or sing. May perform on stage, for broadcasting, or for sound or video recording.
Photographers (27-4021)	Photograph people, landscapes, merchandise, or other subjects. May use lighting equipment to enhance a subject's appearance. May use editing software to produce finished images and prints. Includes commercial and industrial photographers, scientific photographers, and photojournalists.
Producers and Directors (27-2012)	Produce or direct stage, television, radio, video, or film productions for entertainment, information, or instruction. Responsible for creative decisions, such as interpretation of script, choice of actors or guests, set design, sound, special effects, and choreography.
Set and Exhibit Designers (27-1027)	Design special exhibits and sets for film, video, television, and theater productions. May study scripts, confer with directors, and conduct research to determine appropriate architectural styles.
Sound Engineering Technicians (27-4014)	Assemble and operate equipment to record, synchronize, mix, edit, or reproduce sound, including music, voices, or sound effects, for theater, video, film, television, podcasts, sporting events, and other productions.
Special Effects Artists and Animators (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 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.

Exhibit 15. Demand and Wages for AME Occupations, San Diego County (2022-2027)

Description	Avg. Annual Openings	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings
Photographers	267	\$14.51	\$25.23	\$45.61
Graphic Designers	263	\$22.12	\$29.18	\$37.23
Musicians and Singers	233	\$15.97	\$29.61	\$54.98
Fine Artists, Including Painters, Sculptors, and Illustrators	135	\$4.80	\$12.05	\$25.45
Producers and Directors	122	\$23.48	\$36.80	\$49.69
Actors	114	\$22.66	\$27.96	\$36.42
Web and Digital Interface Designers	112	\$28.56	\$39.71	\$60.12
Audio and Video Technicians	86	\$22.24	\$23.50	\$30.32
Art Directors	85	\$22.87	\$41.05	\$64.02
Craft Artists	65	\$2.89	\$7.40	\$16.24
Music Directors and Composers	52	\$14.49	\$19.53	\$38.00
Special Effects Artists and Animators	51	\$18.58	\$32.20	\$47.75
Media and Communication Workers, All Other	44	\$27.20	\$36.21	\$38.66
Film and Video Editors	36	\$23.20	\$23.89	\$41.74
Broadcast Announcers and Radio Disc Jockeys	34	\$14.32	\$23.20	\$39.16
Broadcast Technicians	25	\$14.28	\$14.73	\$30.17
Camera Operators, Television, Video, and Film	23	\$20.32	\$28.39	\$38.57
Dancers	21	\$15.41	\$20.45	\$32.19
Artists and Related Workers, All Other	18	\$9.18	\$25.37	\$35.35
Disc Jockeys, Except Radio	15	\$14.31	\$24.16	\$45.05
Choreographers	14	\$15.40	\$15.42	\$29.72
Set and Exhibit Designers	13	\$15.94	\$22.93	\$33.50
Sound Engineering Technicians	11	\$23.77	\$30.17	\$44.78
Lighting Technicians	10	\$18.39	\$20.90	\$25.21
Makeup Artists, Theatrical and Performance	4	\$37.50	\$70.72	\$113.16
Total	1,853			

Exhibit 16. Demand and Wages for AME Occupations, Imperial County (2022-2027)

Description	Avg. Annual Openings	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings
Producers and Directors	7	\$21.62	\$29.67	\$52.44
Graphic Designers	6	\$14.59	\$19.11	\$28.57
Film and Video Editors	2	\$28.54	\$35.33	\$56.44
Broadcast Technicians	2	\$23.21	\$24.08	\$38.59
Camera Operators, Television, Video, and Film	2	\$26.26	\$29.73	\$44.96
Musicians and Singers	2	\$20.88	\$37.14	\$55.84
Media and Communication Workers, All Other	2	\$28.17	\$31.02	\$44.57
Audio and Video Technicians	1	\$20.45	\$26.11	\$33.92
Music Directors and Composers	1	\$15.46	\$26.13	\$35.70
Broadcast Announcers and Radio Disc Jockeys	0	\$14.96	\$21.36	\$30.64
Art Directors	0	\$11.86	\$34.25	\$59.09
Photographers	0	\$15.85	\$20.19	\$28.13
Set and Exhibit Designers	0	\$10.00	\$20.66	\$39.07
Fine Artists, Including Painters, Sculptors, and Illustrators	0	\$18.44	\$26.01	\$33.21
Web and Digital Interface Designers	0	\$32.72	\$45.45	\$62.86
Artists and Related Workers, All Other	0	\$18.04	\$28.10	\$42.24
Sound Engineering Technicians	0	\$24.82	\$28.09	\$36.92
Special Effects Artists and Animators	0	\$9.55	\$24.67	\$46.55
Lighting Technicians	0	\$16.48	\$21.94	\$26.86
Craft Artists	0	\$2.63	\$7.16	\$18.40
Actors	0	\$20.54	\$26.90	\$45.05
Disc Jockeys, Except Radio	0	\$14.55	\$21.11	\$24.73
Makeup Artists, Theatrical and Performance	0	\$48.73	\$78.94	\$79.87
Dancers	N/A	N/A	N/A	N/A
Choreographers	N/A	N/A	N/A	N/A
Total	25			

"N/A" indicates the data is not available

Exhibit 17. Related TOP and CIP Codes for AME Occupations

TOP or CIP Code	TOP or CIP Program Title
TOP 0601.00	Media and Communications, General
TOP 0604.00	Radio and Television
TOP 0604.10	Radio
TOP 0604.20	Television (including combined TV/film/video)
TOP 0610.00	Mass Communications
TOP 0612.20	Film Production
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
TOP 0614.60	Computer Graphics and Digital Imagery
TOP 0953.60	Technical Illustration
TOP 1001.00	Fine Arts, General
TOP 1002.00	Art
TOP 1002.10	Painting and Drawing
TOP 1002.20	Sculpture
TOP 1002.30	Ceramics
TOP 1004.00	Music
TOP 1005.00	Commercial Music
TOP 1006.00	Technical Theater
TOP 1007.00	Dramatic Arts
TOP 1008.00	Dance
TOP 1008.10	Commercial Dance
TOP 1009.00	Applied Design
TOP 1009.10	Jewelry
TOP 1011.00	Photography
TOP 1012.00	Applied Photography
TOP 1013.00	Commercial Art
TOP 1030.00	Graphic Art and Design
TOP 1099.00	Other Fine and Applied Arts
TOP 3007.00	Cosmetology and Barbering
CIP 09.0100	Communication and Media Studies
CIP 09.0404	Photojournalism
CIP 09.0701	Radio and Television
CIP 09.0702	Digital Communication and Media/Multimedia
CIP 09.0906	Sports Communication
CIP 10.0105	Communications Technology/Technician
CIP 10.0201	Photographic and Film/Video Technology/Technician and Assistant
CIP 10.0202	Radio and Television Broadcasting Technology/Technician

TOP or CIP Code	TOP or CIP Program Title
CIP 10.0203	Recording Arts Technology/Technician
CIP 10.0299	Audiovisual Communications Technologies/Technicians, Other
CIP 10.0301	Graphic Communications, General
CIP 10.0304	Animation, Interactive Technology, Video Graphics and Special Effects
CIP 10.0305	Graphic and Printing Equipment Operator, General Production
CIP 10.0306	Platemaker/Imager
CIP 10.0308	Computer Typography and Composition Equipment Operator
CIP 11.0801	Web Page, Digital/Multimedia and Information Resources Design
CIP 11.0803	Computer Graphics
CIP 11.0804	Modeling, Virtual Environments and Simulation
CIP 11.0899	Computer Software and Media Applications, Other
CIP 11.1004	Web/Multimedia Management and Webmaster
CIP 12.0401	Cosmetology/Cosmetologist, General
CIP 12.0406	Make-Up Artist/Specialist
CIP 15.0307	Audio Engineering Technology/Technician
CIP 39.0501	Religious/Sacred Music
CIP 39.0502	Worship Ministry
CIP 50.0101	Visual and Performing Arts, General
CIP 50.0102	Digital Arts
CIP 50.0201	Crafts/Craft Design, Folk Art and Artisanry
CIP 50.0301	Dance, General
CIP 50.0302	Ballet
CIP 50.0399	Dance, Other
CIP 50.0401	Design and Visual Communications, General
CIP 50.0402	Commercial and Advertising Art
CIP 50.0404	Industrial and Product Design
CIP 50.0406	Commercial Photography
CIP 50.0409	Graphic Design
CIP 50.0410	Illustration
CIP 50.0411	Game and Interactive Media Design
CIP 50.0499	Design and Applied Arts, Other
CIP 50.0501	Drama and Dramatics/Theatre Arts, General
CIP 50.0502	Technical Theatre/Theatre Design and Technology
CIP 50.0506	Acting
CIP 50.0507	Directing and Theatrical Production
CIP 50.0509	Musical Theatre
CIP 50.0510	Costume Design
CIP 50.0511	Comedy Writing and Performance
CIP 50.0512	Theatre and Dance
CIP 50.0599	Dramatic/Theatre Arts and Stagecraft, Other
CIP 50.0601	Film/Cinema/Media Studies

TOP or CIP Code	TOP or CIP Program Title
CIP 50.0602	Cinematography and Film/Video Production
CIP 50.0605	Photography
CIP 50.0607	Documentary Production
CIP 50.0699	Film/Video and Photographic Arts, Other
CIP 50.0701	Art/Art Studies, General
CIP 50.0702	Fine/Studio Arts, General
CIP 50.0705	Drawing
CIP 50.0706	Intermedia/Multimedia
CIP 50.0708	Painting
CIP 50.0709	Sculpture
CIP 50.0710	Printmaking
CIP 50.0711	Ceramic Arts and Ceramics
CIP 50.0712	Fiber, Textile and Weaving Arts
CIP 50.0713	Jewelry Arts
CIP 50.0714	Metal Arts
CIP 50.0799	Fine Arts and Art Studies, Other
CIP 50.0901	Music, General
CIP 50.0903	Music Performance, General
CIP 50.0904	Music Theory and Composition
CIP 50.0905	Musicology and Ethnomusicology
CIP 50.0906	Conducting
CIP 50.0907	Keyboard Instruments
CIP 50.0908	Voice and Opera
CIP 50.0910	Jazz/Jazz Studies
CIP 50.0911	Stringed Instruments
CIP 50.0912	Music Pedagogy
CIP 50.0913	Music Technology
CIP 50.0914	Brass Instruments
CIP 50.0915	Woodwind Instruments
CIP 50.0916	Percussion Instruments
CIP 50.0917	Sound Arts
CIP 50.0999	Music, Other
CIP 50.1001	Arts, Entertainment, and Media, General
CIP 50.1002	Fine and Studio Arts Management
CIP 50.1003	Music Management
CIP 50.1004	Theatre/Theatre Arts Management
CIP 50.1099	Arts, Entertainment, and Media Management, Other
CIP 50.1101	Community/Environmental/Socially-Engaged Art
CIP 50.9999	Visual and Performing Arts, Other

Exhibit 18. Number of Awards (Certificates and Degrees) for TOP Codes Conferred by Community Colleges (Program Year 2018-19 through Program Year 2020-21)²⁹

TOP6	TOP6 Program Title	3-Yr Annual Average
0601.00	Media and Communications, General	3
	• Palomar	
	○ Associate Degree	3
0604.00	Radio and Television	16
	• Palomar	
	○ Associate Degree	5
	○ Certificate 30 < 60 semester units	6
	• San Diego City	
	○ Associate Degree	1
	○ Certificate 6 < 18 semester units	2
	• Southwestern	
	○ Associate Degree	2
	○ Certificate 16 < 30 semester units	0
	○ Certificate 6 < 18 semester units	0
0604.10	Radio	12
	• Grossmont	
	○ Associate Degree	5
	○ Certificate 30 < 60 semester units	5
	• San Diego City	
	○ Associate Degree	1
	○ Certificate 12 < 18 semester units	1
	○ Certificate 8 < 16 semester units	0
0604.20	Television (including combined TV/Film/Video)	53
	• Grossmont	
	○ Associate Degree	5
	○ Certificate 30 < 60 semester units	5
	• MiraCosta	
	○ Associate for Transfer Degree	6
	• Palomar	
	○ Associate for Transfer Degree	9
	• San Diego City	
	○ Associate for Transfer Degree	7
	○ Certificate 8 < 16 semester units	2
	○ Certificate 6 < 18 semester units	2
	• Southwestern	
	○ Associate Degree	1
	○ Associate for Transfer Degree	15
	○ Certificate 6 < 18 semester units	1

²⁹ A conservative estimate of program supply was used and only the number of awards from TOP codes included in Exhibit 17 was used. Program awards include associate degrees, certificates, postsecondary non-degree, and bachelor's degrees.

TOP6	TOP6 Program Title	3-Yr Annual Average
0610.00	Mass Communications	2
	• Palomar	
	○ Associate Degree	2
0612.20	Film Production	19
	• San Diego City	
	○ Associate Degree	5
	○ Certificate 12 < 18 semester units	1
	○ Certificate 8 < 16 semester units	3
	○ Certificate 6 < 18 semester units	1
	• Southwestern	
	○ Associate Degree	7
	○ Certificate 30 < 60 semester units	0
	○ Certificate 16 < 30 semester units	2
0614.00	Digital Media	168
	• MiraCosta	
	○ Certificate 6 < 18 semester units	14
	• Palomar	
	○ Associate Degree	9
	○ Certificate 30 < 60 semester units	9
	○ Certificate 18 < 30 semester units	1
	○ Certificate 16 < 30 semester units	1
	○ Certificate 6 < 18 semester units	2
	• San Diego Continuing Education	
	○ Noncredit award 288 < 480 hours	11
	○ Noncredit award 192 < 288 hours	35
	○ Noncredit award 144 < 192 hours	3
	○ Noncredit award 96 < 144 hours	83
0614.10	Multimedia	32
	• MiraCosta	
	○ Certificate 30 < 60 semester units	2
	○ Certificate 6 < 18 semester units	3
	• Palomar	
	○ Associate Degree	2
	○ Certificate 30 < 60 semester units	1
	○ Certificate 16 < 30 semester units	0
	• San Diego Continuing Education	
	○ Noncredit award 192 < 288 hours	8
	• San Diego Mesa	
	○ Associate Degree	13
	○ Certificate 30 < 60 semester units	1
	○ Certificate 16 < 30 semester units	2

TOP6	TOP6 Program Title	3-Yr Annual Average
0614.20	Electronic Game Design	4
	• Palomar	
	○ Certificate 6 < 18 semester units	0
	• San Diego Mesa	
	○ Associate Degree	0
	○ Certificate 6 < 18 semester units	0
	• Southwestern	
	○ Associate Degree	3
	○ Certificate 16 < 30 semester units	1
	○ Certificate 12 < 18 semester units	0
0614.30	Website Design and Development	475
	• Cuyamaca	
	○ Associate Degree	4
	○ Certificate 30 < 60 semester units	0
	○ Certificate 16 < 30 semester units	0
	• Imperial	
	○ Associate Degree	12
	○ Certificate 30 < 60 semester units	0
	○ Certificate 18 < 30 semester units	1
	○ Certificate 16 < 30 semester units	6
	○ Credit Award, < 6 semester units	2
	• MiraCosta	
	○ Associate Degree	4
	○ Certificate 30 < 60 semester units	4
	○ Certificate 6 < 18 semester units	3
	• Palomar	
	○ Associate Degree	1
	○ Certificate 30 < 60 semester units	0
	○ Certificate 16 < 30 semester units	1
	• San Diego Continuing Education	
	○ Noncredit award < 48 hours	18
	○ Noncredit award 288 < 480 hours	53
	○ Noncredit award 144 < 192 hours	82
	○ Noncredit award 96 < 144 hours	146
	○ Noncredit award 48 < 96 hours	113
	• San Diego Mesa	
	○ Associate Degree	8
	○ Certificate 18 < 30 semester units	2
	○ Certificate 16 < 30 semester units	3
	• Southwestern	
	○ Associate Degree	3
	○ Certificate 16 < 30 semester units	1
	○ Certificate 8 < 16 semester units	1

TOP6	TOP6 Program Title	3-Yr Annual Average
	○ Certificate 6 < 18 semester units	7
0614.40	Animation	10
	● Palomar	
	○ Associate Degree	3
	○ Certificate 18 < 30 semester units	2
	○ Certificate 16 < 30 semester units	2
	○ Certificate 6 < 18 semester units	0
	● Southwestern	
	○ Certificate 6 < 18 semester units	3
0614.60	Computer Graphics and Digital Imagery	144
	● MiraCosta	
	○ Associate Degree	14
	○ Certificate 30 < 60 semester units	18
	● Palomar	
	○ Associate Degree	3
	○ Certificate 18 < 30 semester units	0
	○ Certificate 16 < 30 semester units	2
	● San Diego Continuing Education	
	○ Noncredit award 96 < 144 hours	107
	● San Diego Mesa	
	○ Certificate 6 < 18 semester units	0
	● San Diego Miramar	0
	○ Certificate 30 < 60 semester units	0
0953.60	Technical Illustration	1
	● San Diego City	
	○ Associate Degree	1
	○ Certificate 16 < 30 semester units	0
1001.00	Fine Arts, General	27
	● Cuyamaca	
	○ Associate for Transfer Degree	2
	● Grossmont	
	○ Associate for Transfer Degree	7
	● Imperial	
	○ Associate for Transfer Degree	2
	● MiraCosta	
	○ Associate for Transfer Degree	1
	○ Certificate 18 < 30 semester units	0
	○ Certificate 16 < 30 semester units	2
	● Palomar	
	○ Associate for Transfer Degree	1
	● San Diego City	
	○ Associate for Transfer Degree	2
	● San Diego Mesa	

TOP6	TOP6 Program Title	3-Yr Annual Average
	○ Associate for Transfer Degree	5
	○ Certificate 6 < 18 semester units	0
	● San Diego Miramar	
	○ Associate for Transfer Degree	1
	● Southwestern	
	○ Associate for Transfer Degree	4
1002.00	Art	172
	● Cuyamaca	
	○ Associate for Transfer Degree	6
	● Grossmont	
	○ Associate for Transfer Degree	30
	● Imperial	
	○ Associate for Transfer Degree	12
	● MiraCosta	
	○ Associate Degree	1
	○ Associate for Transfer Degree	25
	● Palomar	
	○ Associate Degree	0
	○ Associate for Transfer Degree	6
	● San Diego City	
	○ Associate Degree	4
	○ Associate for Transfer Degree	8
	● San Diego Mesa	
	○ Associate Degree	12
	○ Associate for Transfer Degree	20
	○ Certificate 6 < 18 semester units	1
	● San Diego Miramar	
	○ Associate Degree	10
	○ Associate for Transfer Degree	8
	● Southwestern	
	○ Associate Degree	4
	○ Associate for Transfer Degree	25
1002.10	Painting and Drawing	10
	● Cuyamaca	
	○ Associate Degree	3
	● Grossmont	
	○ Associate Degree	4
	● Palomar	
	○ Associate Degree	2
	● San Diego Mesa	
	○ Associate Degree	0
	● San Diego Miramar	
	○ Associate Degree	1

TOP6	TOP6 Program Title	3-Yr Annual Average
1002.20	Sculpture	1
	• Grossmont	
	○ Associate Degree	1
1002.30	Ceramics	2
	• Grossmont	
	○ Associate Degree	1
	• San Diego Mesa	
	○ Associate Degree	1
1004.00	Music	54
	• Cuyamaca	
	○ Associate Degree	2
	• Grossmont	
	○ Associate Degree	6
	○ Associate for Transfer Degree	3
	• Imperial	
	○ Associate for Transfer Degree	3
	• MiraCosta	
	○ Associate Degree	8
	• Palomar	
	○ Associate Degree	4
	○ Associate for Transfer Degree	3
	○ Certificate 6 < 18 semester units	0
	• San Diego Mesa	
	○ Associate Degree	11
	○ Certificate 16 < 30 semester units	0
	○ Certificate 6 < 18 semester units	1
	• Southwestern	
	○ Associate Degree	3
	○ Associate for Transfer Degree	9
	○ Certificate 6 < 18 semester units	1
1005.00	Commercial Music	25
	• MiraCosta	
	○ Associate Degree	8
	○ Certificate 18 < 30 semester units	2
	○ Certificate 16 < 30 semester units	6
	○ Certificate 6 < 18 semester units	1
	• San Diego City	
	○ Associate Degree	4
	○ Certificate 16 < 30 semester units	1
	• San Diego Miramar	
	○ Associate Degree	2
	○ Certificate 16 < 30 semester units	1

TOP6	TOP6 Program Title	3-Yr Annual Average
	○ Certificate 6 < 18 semester units	0
	● Southwestern	
	○ Associate Degree	0
1006.00	Technical Theater	8
	● MiraCosta	
	○ Associate Degree	2
	○ Certificate 18 < 30 semester units	2
	○ Certificate 16 < 30 semester units	0
	● San Diego City	
	○ Certificate 6 < 18 semester units	3
	● Southwestern	
	○ Certificate 16 < 30 semester units	1
1007.00	Dramatic Arts	53
	● Grossmont	
	○ Associate Degree	8
	○ Associate for Transfer Degree	3
	○ Certificate 30 < 60 semester units	8
	○ Certificate 16 < 30 semester units	1
	● MiraCosta	
	○ Associate Degree	4
	○ Associate for Transfer Degree	11
	● Palomar	
	○ Associate Degree	3
	○ Associate for Transfer Degree	2
	● San Diego City	
	○ Associate Degree	1
	○ Associate for Transfer Degree	3
	● San Diego Mesa	
	○ Associate Degree	4
	○ Associate for Transfer Degree	0
	● Southwestern	
	○ Associate Degree	2
	○ Associate for Transfer Degree	3
1008.00	Dance	17
	● Grossmont	
	○ Associate Degree	5
	○ Certificate 30 < 60 semester units	0
	○ Certificate 16 < 30 semester units	5
	● MiraCosta	
	○ Associate Degree	2
	● Palomar	
	○ Certificate 6 < 18 semester units	0
	● San Diego City	

TOP6	TOP6 Program Title	3-Yr Annual Average
	○ Associate Degree	1
	● San Diego Mesa	
	○ Associate Degree	3
	● Southwestern	
	○ Associate Degree	1
1008.10	Commercial Dance	10
	● MiraCosta	
	○ Certificate 18 < 30 semester units	0
	○ Certificate 16 < 30 semester units	0
	○ Certificate 12 < 18 semester units	1
	● Palomar	
	○ Associate Degree	3
	○ Certificate 30 < 60 semester units	1
	○ Certificate 18 < 30 semester units	3
	○ Certificate 16 < 30 semester units	2
1009.00	Applied Design	2
	● MiraCosta	
	○ Certificate 6 < 18 semester units	2
1009.10	Jewelry	0
	● Palomar	
	○ Associate Degree	0
1011.00	Photography	19
	● Grossmont	
	○ Associate Degree	7
	○ Certificate 30 < 60 semester units	0
	○ Certificate 16 < 30 semester units	12
	● Southwestern	
	○ Associate Degree	0
1012.00	Applied Photography	45
	● MiraCosta	
	○ Associate Degree	9
	○ Certificate 18 < 30 semester units	5
	○ Certificate 16 < 30 semester units	7
	● Palomar	
	○ Associate Degree	2
	○ Certificate 30 < 60 semester units	3
	○ Certificate 6 < 18 semester units	2
	● San Diego City	
	○ Associate Degree	5
	○ Certificate 30 < 60 semester units	2
	○ Certificate 18 < 30 semester units	2
	● Southwestern	
	○ Associate Degree	5

TOP6	TOP6 Program Title	3-Yr Annual Average
	○ Certificate 30 < 60 semester units	0
	○ Certificate 16 < 30 semester units	3
1013.00	Commercial Art	3
	• Palomar	
	○ Associate Degree	3
1030.00	Graphic Art and Design	66
	• Cuyamaca	
	○ Associate Degree	10
	○ Certificate 30 < 60 semester units	4
	• Palomar	
	○ Associate Degree	6
	• San Diego City	
	○ Associate Degree	20
	○ Certificate 30 < 60 semester units	14
	○ Certificate 18 < 30 semester units	2
	• Southwestern	
	○ Associate Degree	10
1099.00	Other Fine and Applied Arts	12
	• Grossmont	
	○ Associate Degree	12
3007.00	Cosmetology and Barbering	72
	• MiraCosta	
	○ Certificate 30 < 60 semester units	1
	• San Diego City	
	○ Associate Degree	5
	○ Certificate 30 < 60 semester units	32
	○ Certificate 18 < 30 semester units	31
	○ Certificate 16 < 30 semester units	3
TOP Total		1,537

Exhibit 19. Number of Awards (Certificates and Degrees) for CIP Codes Conferred by Postsecondary Institutions (Program Year 2017-18 through Program Year 2019-20)³⁰

CIP Code	CIP Program Title	3-Yr Annual Average
09.0100	Communication and Media Studies	380
	• San Diego Christian College	
	○ Bachelor's degree	16
	• University of California-San Diego	
	○ Bachelor's degree	257
	• University of San Diego	
	○ Bachelor's degree	107
09.0701	Radio and Television	82
	• San Diego State University	
	○ Bachelor's degree	82
09.0702	Digital Communication and Media/Multimedia	2
	• National University	
	○ Bachelor's degree	1
	• Platt College-San Diego	
	○ Associate Degree	1
10.0304	Animation, Interactive Technology, Video Graphics, and Special Effects	5
	• Newschool of Architecture and Design	
	○ Bachelor's degree	5
	• Platt College-San Diego	
	○ Award < 1 academic yr	0
11.0801	Web Page, Digital/Multimedia and Information Resources Design	15
	• California Institute of Arts & Technology	
	○ Award < 1 academic yr	2
	• San Diego Global Knowledge University	
	○ Award < 1 academic yr	13
11.0899	Computer Software and Media Applications, Other	70
	• ATA College	
	○ Award < 1 academic yr	3
	• Escondido Adult School	
	○ Award < 1 academic yr	29
	• Poway Adult School	
	○ Award < 1 academic yr	26
	• Vista Adult School	
	○ Award < 1 academic yr	12
12.0401	Cosmetology/Cosmetologist, General	256
	• Bellus Academy-Chula Vista	
	○ Postsecondary awards	17
	• Bellus Academy-El Cajon	
	○ Postsecondary awards	17
	• Bellus Academy-Poway	

³⁰ A conservative estimate of program supply was used and only the number of awards from CIP codes included in Exhibit 17 was used. Program awards include associate degrees, certificates, postsecondary non-degree, and bachelor's degrees.

CIP Code	CIP Program Title	3-Yr Annual Average
	○ Postsecondary awards	28
	• California Hair Design Academy	
	○ Postsecondary awards	41
	• Palomar Institute of Cosmetology	
	○ Postsecondary awards	44
	• Paul Mitchell the School-San Diego	
	○ Award 2 < 4 academic yrs	20
	○ Postsecondary awards	89
12.0406	Make-Up Artist/Specialist	23
	• Bellus Academy-Chula Vista	
	○ Award < 1 academic yr	11
	• Bellus Academy-Poway	
	○ Award < 1 academic yr	10
	• Paul Mitchell the School-San Diego	
	○ Award 1 < 2 academic yrs	0
	○ Award < 1 academic yr	2
39.0501	Religious/Sacred Music	2
	• Point Loma Nazarene University	
	○ Bachelor's degree	2
50.0101	Visual and Performing Arts, General	191
	• California State University-San Marcos	
	○ Bachelor's degree	74
	• Point Loma Nazarene University	
	○ Bachelor's degree	7
	• University of California-San Diego	
	○ Bachelor's degree	110
50.0102	Digital Arts	1
	• Point Loma Nazarene University	
	○ Bachelor's degree	1
50.0301	Dance, General	13
	• San Diego State University	
	○ Bachelor's degree	8
	• University of California-San Diego	
	○ Bachelor's degree	5
50.0401	Design and Visual Communications, General	19
	• University of California-San Diego	
	○ Bachelor's degree	19
50.0402	Commercial and Advertising Art	0
	• Ashford University	
	○ Bachelor's degree	0
50.0404	Industrial and Product Design	4
	• Newschool of Architecture and Design	
	○ Bachelor's degree	4
50.0409	Graphic Design	77
	• California Institute of Arts & Technology	

CIP Code	CIP Program Title	3-Yr Annual Average
	○ Award < 1 academic yr	0
	• Newschool of Architecture and Design	
	○ Bachelor's degree	0
	• Platt College-San Diego	
	○ Associate Degree	61
	• Point Loma Nazarene University	
	○ Bachelor's degree	16
50.0501	Drama and Dramatics/Theatre Arts, General	91
	• San Diego State University	
	○ Bachelor's degree	47
	• University of California-San Diego	
	○ Bachelor's degree	37
	• University of San Diego	
	○ Bachelor's degree	7
50.0601	Film/Cinema/Media Studies	1
	• National University	
	○ Bachelor's degree	1
50.0602	Cinematography and Film/Video Production	55
	• John Paul the Great Catholic University	
	○ Bachelor's degree	55
50.0701	Art/Art Studies, General	213
	• San Diego State University	
	○ Bachelor's degree	201
	• University of Saint Katherine	
	○ Bachelor's degree	0
	• University of San Diego	
	○ Bachelor's degree	12
50.0702	Fine/Studio Arts, General	29
	• University of California-San Diego	
	○ Bachelor's degree	29
50.0706	Intermedia/Multimedia	38
	• Platt College-San Diego	
	○ Bachelor's degree	38
50.0713	Jewelry Arts	234
	• Gemological Institute of America-Carlsbad	
	○ Award 1 < 2 academic yrs	15
	○ Award < 1 academic yr	219
50.0901	Music, General	44
	• California State University-San Marcos	
	○ Bachelor's degree	6
	• Point Loma Nazarene University	
	○ Bachelor's degree	8
	• San Diego Christian College	
	○ Bachelor's degree	1
	• San Diego State University	

CIP Code	CIP Program Title	3-Yr Annual Average
	○ Bachelor's degree	4
	• University of California-San Diego	
	○ Bachelor's degree	18
	• University of Saint Katherine	
	○ Bachelor's degree	0
	• University of San Diego	
	○ Bachelor's degree	7
50.0903	Music Performance, General	49
	• San Diego State University	
	○ Bachelor's degree	49
50.0904	Music Theory and Composition	1
	• Point Loma Nazarene University	
	○ Bachelor's degree	1
50.0908	Voice and Opera	1
	• Point Loma Nazarene University	
	○ Bachelor's degree	1
50.1001	Arts, Entertainment, and Media Management, General	8
	• National University	
	○ Bachelor's degree	8
	CIP Total	1,904

Exhibit 20. Number of Degrees Awarded by Award Type (Program Year 2017-18 through Program Year 2020-21)

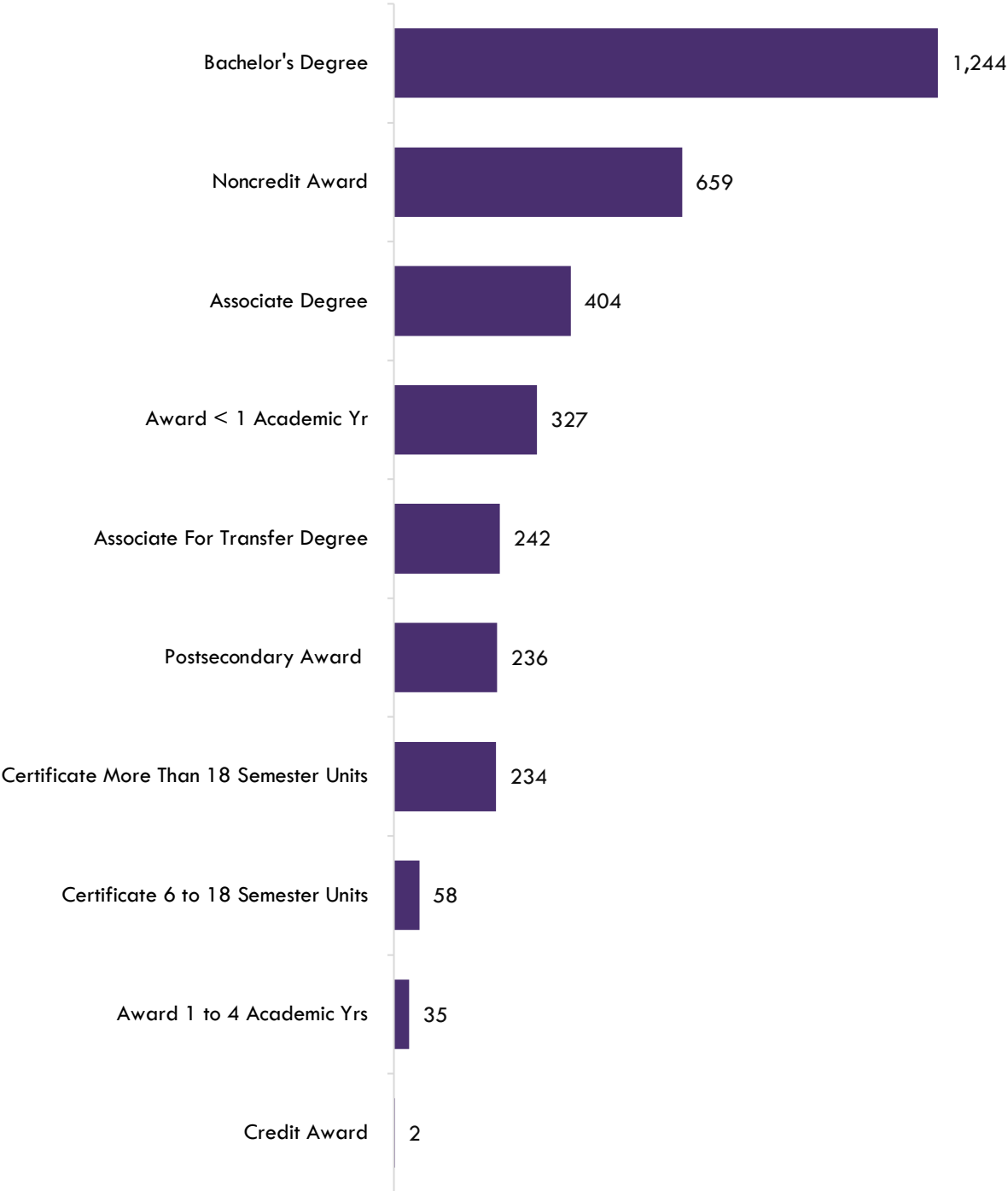


Exhibit 21. AME Compatible Occupation, O*NET Definition, and the Top Compatible AME Occupation and Compatibility Index Score with Top AME Occupation

AME Compatible Occupation and O*NET Definition	Top AME Compatible Occupation	Compatibility Index Score	
<u>Administrative Services Managers (SOC 11-3012)</u>	Plan, direct, or coordinate one or more administrative services of an organization, such as records and information management, mail distribution, and other office support services.	Producers and Directors	89
<u>Agents and Business Managers of Artists, Performers, and Athletes (SOC 13-1011)</u>	Represent and promote artists, performers, and athletes in dealings with current or prospective employers. May handle contract negotiation and other business matters for clients.	Graphic Designers	91
<u>Bookkeeping, Accounting, and Auditing Clerks (SOC 43-3031)</u>	Compute, classify, and record numerical data to keep financial records complete. Perform any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records. May also check the accuracy of figures, calculations, and postings pertaining to business transactions recorded by other workers.	Graphic Designers	88
<u>Compliance Officers (SOC 13-1041)</u>	Examine, evaluate, and investigate eligibility for or conformity with laws and regulations governing contract compliance of licenses and permits, and perform other compliance and enforcement inspection and analysis activities not classified elsewhere.	Broadcast Announcers and Radio Disc Jockeys	90
<u>Court, Municipal, and License Clerks (SOC 43-4031)</u>	Perform clerical duties for courts of law, municipalities, or governmental licensing agencies and bureaus. May prepare docket of cases to be called; secure information for judges and court; prepare draft agendas or bylaws for town or city council; answer official correspondence; keep fiscal records and accounts; issue licenses or permits; and record data, administer tests, or collect fees.	Broadcast Announcers and Radio Disc Jockeys	85
<u>Dental Assistants (SOC 31-9091)</u>	Perform limited clinical duties under the direction of a dentist. Clinical duties may include equipment preparation and sterilization, preparing patients for treatment, assisting the dentist during treatment, and providing patients with instructions for oral healthcare procedures. May perform administrative duties such as scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes.	Makeup Artists, Theatrical and Performance	89
<u>Dental Hygienists (SOC 29-1292)</u>	Administer oral hygiene care to patients. Assess patient oral hygiene problems or needs and maintain health records. Advise patients on oral health maintenance and disease prevention. May provide advanced care such as providing fluoride treatment or administering topical anesthesia.	Makeup Artists, Theatrical and Performance	89

AME Compatible Occupation and O*NET Definition	Top AME Compatible Occupation	Compatibility Index Score
Dispatchers, Except Police, Fire, and Ambulance (SOC 43-5032)	Broadcast Announcers and Radio Disc Jockeys	90
Editors (SOC 27-3041)	Producers and Directors	91
Eligibility Interviewers, Government Programs (SOC 43-4061)	Makeup Artists, Theatrical and Performance	87
Executive Secretaries and Executive Administrative Assistants (SOC 43-6011)	Graphic Designers	89
First-Line Supervisors of Food Preparation and Serving Workers (SOC 35-1012)	Photographers	87
First-Line Supervisors of Gambling Services Workers (SOC 39-1013)	Photographers	91
First-Line Supervisors of Office and Administrative Support Workers (SOC 43-1011)	Art Directors	90
First-Line Supervisors of Retail Sales Workers (SOC 41-1011)	Music Directors and Composers	88

AME Compatible Occupation and O*NET Definition	Top AME Compatible Occupation	Compatibility Index Score
First-Line Supervisors of Material-Moving Machine and Vehicle Operators (SOC 53-1043)	Audio and Video Technicians	86
Human Resources Assistants, Except Payroll and Timekeeping (SOC 43-4161)	Art Directors	85
Information Security Analysts (SOC 15-1212)	Film and Video Editors	90
Insurance Sales Agents (SOC 41-3021)	Graphic Designers	89
Insurance Underwriters (SOC 13-2053)	Graphic Designers	91
Kindergarten Teachers, Except Special Education (SOC 25-2012)	Music Directors and Composers	88
Legal Secretaries and Administrative Assistants (SOC 43-6012)	Broadcast Announcers and Radio Disc Jockeys	88
Librarians and Media Collections Specialists (SOC 25-4022)	Graphic Designers	92

AME Compatible Occupation and O*NET Definition	Top AME Compatible Occupation	Compatibility Index Score
Opticians, Dispensing (SOC 29-2081)	Design, measure, fit, and adapt lenses and frames for client according to written optical prescription or specification. Assist client with inserting, removing, and caring for contact lenses. Assist client with selecting frames. Measure customer for size of eyeglasses and coordinate frames with facial and eye measurements and optical prescription. Prepare work order for optical laboratory containing instructions for grinding and mounting lenses in frames. Verify exactness of finished lens spectacles. Adjust frame and lens position to fit client. May shape or reshape frames. Includes contact lens opticians.	Photographers 93
Paralegals and Legal Assistants (SOC 23-2011)	Assist lawyers by investigating facts, preparing legal documents, or researching legal precedent. Conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action.	Broadcast Announcers and Radio Disc Jockeys 90
Pharmacy Technicians (SOC 29-2052)	Prepare medications under the direction of a pharmacist. May measure, mix, count out, label, and record amounts and dosages of medications according to prescription orders.	Makeup Artists, Theatrical and Performance 91
Phlebotomists (SOC 31-9097)	Draw blood for tests, transfusions, donations, or research. May explain the procedure to patients and assist in the recovery of patients with adverse reactions.	Makeup Artists, Theatrical and Performance 90
Procurement Clerks (SOC 43-3061)	Compile information and records to draw up purchase orders for procurement of materials and services.	Broadcast Announcers and Radio Disc Jockeys 88
Production, Planning, and Expediting Clerks (SOC 43-5061)	Coordinate and expedite the flow of work and materials within or between departments of an establishment according to production schedule. Duties include reviewing and distributing production, work, and shipment schedules; conferring with department supervisors to determine progress of work and completion dates; and compiling reports on progress of work, inventory levels, costs, and production problems.	Special Effects Artists and Animators 89
Property Appraisers and Assessors (SOC 13-2028)³¹	Appraise real estate, exclusively, and estimate its fair value. May assess taxes in accordance with prescribed schedules.	Art Directors 85
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (SOC 41-4012)	Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.	Special Effects Artists and Animators 91

³¹ O*NET occupation updated from Appraisers and Assessors of Real Estate (SOC 13-2023).

AME Compatible Occupation and O*NET Definition	Top AME Compatible Occupation	Compatibility Index Score	
<u>Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products (SOC 41-4011)</u>	Sell goods for wholesalers or manufacturers where technical or scientific knowledge is required in such areas as biology, engineering, chemistry, and electronics, normally obtained from at least 2 years of postsecondary education.	Broadcast Announcers and Radio Disc Jockeys	90
<u>Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (SOC 43-6014)</u>	Perform routine administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers.	Graphic Designers	90
<u>Securities, Commodities, and Financial Services Sales Agents (SOC 41-3031)</u>	Buy and sell securities or commodities in investment and trading firms, or provide financial services to businesses and individuals. May advise customers about stocks, bonds, mutual funds, commodities, and market conditions.	Special Effects Artists and Animators	88
<u>Self-Enrichment Teachers (SOC 25-3021)</u>	Teach or instruct individuals or groups for the primary purpose of self-enrichment or recreation, rather than for an occupational objective, educational attainment, competition, or fitness.	Musicians and Singers	91
<u>Surveying and Mapping Technicians (SOC 17-3031)</u>	Perform surveying and mapping duties, usually under the direction of an engineer, surveyor, cartographer, or photogrammetrist, to obtain data used for construction, mapmaking, boundary location, mining, or other purposes. May calculate mapmaking information and create maps from source data, such as surveying notes, aerial photography, satellite data, or other maps to show topographical features, political boundaries, and other features. May verify accuracy and completeness of maps.	Broadcast Technicians	90
<u>Transportation Security Screeners (SOC 33-9093)</u>	Conduct screening of passengers, baggage, or cargo to ensure compliance with Transportation Security Administration (TSA) regulations. May operate basic security equipment such as x-ray machines and hand wands at screening checkpoints.	Camera Operators, Television, Video, and Film	92

Exhibit 22. SOC Code and TOP Code Crosswalk for AME Compatible Occupations³²

Occupational Title (SOC Code)		
TOP6	TOP6 Program Title	
Administrative Services Managers (SOC 11-3012)		
	TOP 0501.00	Business and Commerce, General
	TOP 0505.00	Business Administration
	TOP 0506.00	Business Management
	TOP 0506.30	Management Development and Supervision
	TOP 0506.40	Small Business and Entrepreneurship
	TOP 0514.40	Office Management
	TOP 0702.10	Software Applications
	TOP 0501.00	Business and Commerce, General
Agents and Business Managers of Artists, Performers, and Athletes (SOC 13-1011)		
	TOP 0509.20	Purchasing
Bookkeeping, Accounting, and Auditing Clerks (SOC 43-3031)		
	TOP 0502.00	Accounting
Compliance Officers (SOC 13-1041)		
	TOP 0101.00	Agriculture Technology and Sciences, General
	TOP 0301.00	Environmental Science
	TOP 0302.00	Environmental Studies
	TOP 0516.00	Labor and Industrial Relations
	TOP 2206.00	Geography
Court, Municipal, and License Clerks (SOC 43-4031)		
	TOP 0514.30	Court Reporting
	TOP 0514.10	Legal Office Technology
Dental Assistants (SOC 31-9091)		
	TOP 1240.00	Dental Occupations
	TOP 1240.10	Dental Assistant
Dental Hygienists (SOC 29-1292)		
	TOP 1240.00	Dental Occupations
	TOP 1240.20	Dental Hygienist
Dispatchers, Except Police, Fire, and Ambulance (SOC 43-5030)		
	TOP 0514.00	Office Technology/Office Computer Applications

³² The TOP codes displayed are based on a crosswalk created in collaboration with the community colleges in determining the programs in the region of study that may train for this occupation, but TOP codes may vary depending on the program. This crosswalk could serve as a starting point for K-12 partners in identifying the colleges and programs that train for these occupations.

Occupational Title (SOC Code)		
TOP6	TOP6 Program Title	
Editors (SOC 27-3041)		
	TOP 0601.00	Media and Communications, General
	TOP 0602.00	Journalism
	TOP 0604.30	Broadcast Journalism
	TOP 0610.00	Mass Communications
	TOP 0607.00	Technical Communication
	TOP 0699.00	Other Media and Communications
Eligibility Interviewers, Government Programs (SOC 43-4061)		
	TOP 2101.00	Community Services, General
Executive Secretaries and Executive Administrative Assistants (SOC 43-6011)		
	TOP 0514.00	Office Technology/Office Computer Applications
First-Line Supervisors of Food Preparation and Serving Workers (SOC 35-1012)		
	TOP 1306.00	Nutrition, Foods and Culinary Arts
	TOP 1306.20	Dietetic Services and Management
	TOP 1306.30	Culinary Arts
	TOP 1307.10	Restaurant and Food Services and Management
First-Line Supervisors of Gambling Services Workers (SOC 39-1013)		
	TOP 1307.30	Resort and Club Management
First-Line Supervisors of Office and Administrative Support Workers (SOC 43-1011)		
	TOP 0506.30	Management Development and Supervision
	TOP 0509.70	E-Commerce (business emphasis)
	TOP 0514.40	Office Management
	TOP 0702.10	Software Applications
First-Line Supervisors of Retail Sales Workers (SOC 41-1011)		
	TOP 0506.50	Retail Store Operations and Management
	TOP 0509.40	Sales and Salesmanship
	TOP 0509.60	Display
	TOP 0509.70	E-Commerce (business emphasis)
Human Resources Assistants, Except Payroll and Timekeeping (SOC 43-4161)		
	TOP 0514.00	Office Technology/Office Computer Applications
Information Security Analysts (SOC 15-1212)		
	TOP 0702.00	Computer Information Systems
	TOP 0708.00	Computer Infrastructure and Support

Occupational Title (SOC Code)		
TOP6	TOP6 Program Title	
	TOP 0708.10	Computer Networking
	TOP 0708.20	Computer Support
	TOP 0709.00	World Wide Web Administration
	TOP 2105.40	Forensics, Evidence, and Investigation
Insurance Sales Agents (SOC 41-3021)		
	TOP 0512.00	Insurance
Insurance Underwriters (SOC 13-2053)		
	TOP 0504.00	Banking and Finance
	TOP 0512.00	Insurance
Kindergarten Teachers, Except Special Education (SOC 25-2012)		
	TOP 0801.00	Education, General
	TOP 0802.10	Educational Aide (Teacher Assistant), Bilingual
	TOP 1305.00	Child Development/Early Care and Education
	TOP 1305.40	Preschool Age Children
	TOP 1305.50	The School Age Child
	TOP 1305.90	Infants and Toddlers
Paralegals and Legal Assistants (SOC 23-2011)		
	TOP 1401.00	Law, General
	TOP 1402.00	Paralegal
Pharmacy Technicians (SOC 29-2052)		
	TOP 1221.00	Pharmacy Technology
Phlebotomists (SOC 31-9097)		
	TOP 1205.10	Phlebotomy
Procurement Clerks (SOC 43-3061)		
	TOP 0514.00	Office Technology/Office Computer Applications
	TOP 0509.20	Purchasing
Production, Planning, and Expediting Clerks (SOC 43-5061)		
	TOP 0510.00	Logistics and Materials Transportation
Property Appraisers and Assessors (SOC 13-2028)		
	TOP 0501.00	Business and Commerce, General
	TOP 0502.00	Accounting
	TOP 0502.10	Tax Studies
	TOP 0504.00	Banking and Finance
	TOP 0511.00	Real Estate

Occupational Title (SOC Code)		
TOP6	TOP6 Program Title	
	TOP 0511.10	Escrow
	TOP 0512.00	Insurance
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (SOC 41-4012)		
	TOP 0112.00	Agriculture Business, Sales and Service
	TOP 1303.20	Fashion Merchandising
	TOP 0509.60	Display
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (SOC 43-6014)		
	TOP 0514.00	Office Technology/Office Computer Applications
Securities, Commodities, and Financial Services Sales Agents (SOC 41-3031)		
	TOP 0504.00	Banking and Finance
	TOP 0509.40	Sales and Salesmanship
Self-Enrichment Teachers (SOC 25-3021)		
	TOP 0836.00	Recreation
	TOP 1002.00	Art
	TOP 1009.10	Jewelry
	TOP 1008.00	Dance
Surveying and Mapping Technicians (SOC 17-3031)		
	TOP 0957.30	Surveying
	TOP 2206.10	Geographic Information Systems
Transportation Security Screeners (SOC 33-9093)		
	TOP 2105.30	Industrial and Transportation Security

APPENDIX B: METHODOLOGY

This report features 25 *AME Occupations*. This list of occupations is not intended to represent an exhaustive list of all occupations in Arts, Media, and Entertainment, but rather showcase commonly cited occupations that can be trained by the pathways within this sector and related programs. To identify these occupations, the research team first identified occupations using the sector to SOC (Standard Occupational Classification) crosswalk that summarizes occupations related to the ICT and Digital Media sector. Additionally, a list of occupations in the 2023 CA Arts Curriculum Standards Pathway³³ report for Arts, Media, and Entertainment were identified. Next, O*NET occupations that were listed as being representative of the Arts, Design, Entertainment, Sports and Media Sector were identified.³⁴ Collectively, these resources were cross-referenced to select 25 *AME Occupations* by identifying occupations that were replicated across these resources, and that fit with course offerings considered part of the Arts, Media, and Entertainment K12 sector.

All labor market information and online job posting data for these occupations were obtained using Lightcast 2023.01. The Compatibility Index calculated by Lightcast was used to identify the compatible occupations listed in this report, which is a score created by Lightcast using a proprietary algorithm and O*NET's data. This number is intended to score the compatibility of two occupations in terms of the knowledge, skills, and abilities they require: a score of 100 means complete compatibility, while a score of 0 means no compatibility. First, the research team obtained a list of all occupations and their Compatible Index scores for each of the 25 *AME Occupations*, except those without compatibility data available: Artists and Related Workers; Disc Jockeys, Except Radio; Lighting Technicians; Media and Communication Workers, All Other; and Web and Digital Interface Designers. Next, an average Compatibility Index score for each occupation was calculated, and compatible occupations that had an average Compatibility Index score of 80 or above across all *AME Occupations* were identified, which resulted in 106 occupations. Next, the number of annual job openings within each county were analyzed; compatible occupations with 50 or more annual job openings between 2022 and 2027 for San Diego County and 10 or more for Imperial County were identified. Next, occupations were then filtered by living wage; compatible occupations that earned entry-level wages at or above the living wage in San Diego (i.e., \$18.43 per hour) and Imperial County (i.e., \$15.24 per hour) were identified. This analysis resulted in 29 high-wage, high demand compatible occupations in San Diego County, and 20 compatible occupations in Imperial County that met these criteria.

³³ "Draft: 2023 Arts, Media, and Entertainment Career Technical Education Model Curriculum Standards," California Department of Education (CDE). cde.ca.gov/ci/ct/gi/ameindustrysector.asp.

³⁴ onetcodeconnector.org/find/family/title#27.

ACKNOWLEDGMENTS AND DISCLAIMERS

Mod Research Consulting

- Dr. Priscilla Fernandez, Research Consultant

Center of Excellence (COE) for the San Diego and Imperial Counties Community Colleges

- Dr. Tina Ngo Bartel, Director
- John Edwards, Research Analyst

IMPORTANT DISCLAIMERS

The Center of Excellence (COE) for San Diego and Imperial Counties Community Colleges encourages stakeholders to use this study as a resource for meaningful discussions about K12 pathways and community college programs. For community colleges proposing new programs or modifying existing programs, please review the [Regional Program Recommendation Process](#) for details.

All representations included in this report have been produced from secondary research and a 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 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.