

# Graphic Art and Design (TOP 1030.00)

*Regional Program Demand Report*

*Foothill College, San Francisco larger MSA*

# Introduction and Contents

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## Purpose and Goals

This report is designed to integrate and analyze data from multiple sources to help educational institutions discover regional labor market needs for certain postsecondary programs of study. The overall goal is to help a college align their program offerings the economy and labor market of its service region. To do this, the report selects a set of focus occupations, determines the regional job outlook for them, and compares this to the number of recent graduates in related programs at regional educational institutions. While this is a first step toward a supply/demand analysis, for increased accuracy it could be extended with survey-based information from local employers regarding their hiring outlook and recruitment sources.

The occupation employment and wage numbers are from EMSI's national Complete Employment database, which is built using numerous published data sources from the federal Bureau of Labor Statistics, Bureau of Economic Analysis, and Bureau of the Census. In addition, the report uses industry/occupation data and projections created by the State of AnyState. The completions-by-program and program-to-occupation links use data from the U.S. Department of Education.

These data sources have been specially processed and harmonized to provide more complete and detailed data than any individual source used. For more information, see the final page of this report.

## Focus College

Foothill College

## Region Definition

Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara

## Key Terms and Concepts

**Programs:** Courses of postsecondary study defined by CIP (Classification of Instructional Programs) codes.

**Occupation:** A category of workers defined by the Standard Occupational Classification (SOC).

**Relating occupations to Programs:** EMSI determines these links using information from the U.S. Department of Education.

**Replacement Jobs:** The estimated number of job openings in an occupation due to retirement, turnover, and other factors aside from job growth. Based on national percentages by occupation.

**Annual openings:** The sum of new jobs and estimated replacement jobs for a given occupation, divided by the number of years in the timeframe.

**Earnings:** For industries, total annual earnings per worker is reported; these earnings include wages, salaries, profits, and benefits. Occupational earnings are reported as median hourly wage only.

**Jobs:** Full-time and part-time positions held by proprietors and payroll employees in the public or private sector. May exceed actual worker count.

**Projections:** Estimates of future job or population numbers based on (1) recent historical regional trends and (2) published forecasts created by a consensus of state and federal agencies.

# Executive Summary

## Overview

This report focuses on **6 occupations** which are expected to provide **810 annual job openings** from 2008-2013 in the San Francisco larger MSA 6-county area. Meanwhile, in 2007, area colleges produced **1,781 graduates** in **27 programs** related to these occupations. The numbers do not conclusively show an opportunity for area colleges to expand their offerings in this field.<sup>1</sup>

## Focus Occupations

The following occupations were selected for analysis in this report:<sup>2</sup>

- Art directors
- Multi-media artists and animators
- Artists and related workers, all other
- Graphic designers
- Prepress technicians and workers
- Painting, coating, and decorating workers

## Focus Programs

The key occupations above correspond to the following standard postsecondary program titles:<sup>3</sup>

- Agricultural Communication/Journalism
- Digital Communication and Media/Multimedia
- Graphic Communications, General
- Printing Management
- Prepress/Desktop Publishing and Digital Imaging Design
- Animation, Interactive Technology, Video Graphics and Special Effects
- Graphic and Printing Equipment Operator, General Production
- Platemaker/Imager
- Computer Typography and Composition Equipment Operator
- Graphic Communications, Other
- Web Page, Digital/Multimedia and Information Resources Design

**1. Annual job openings: new plus replacement jobs divided by years in the timeframe. Note that openings may be filled from various sources besides new graduates, and that graduates may work in occupations unrelated to their degree.**

**2. Occupations are defined by the federal SOC system.**

**3. Programs are defined by the federal CIP system. The occupation-program crosswalk is based on the CIP-SOC crosswalk published by the U.S. Department of Education.**

- Computer Graphics
- Computer Software and Media Applications, Other
- Visual and Performing Arts, General
- Crafts/Craft Design, Folk Art and Artisanry
- Design and Visual Communications, General
- Commercial and Advertising Art
- Industrial Design
- Graphic Design
- Illustration
- Fine/Studio Arts, General
- Drawing
- Intermedia/Multimedia
- Painting
- Printmaking
- Fine Arts and Art Studies, Other
- Visual and Performing Arts, Other

## Labor Market Outlook

Aggregated data for all focus occupations:

	Region	State[s]	U.S.
2008 total jobs	23,631	114,513	720,424
2013 total jobs	24,794	122,728	757,756
2008-2013 growth	1,163	8,215	37,332
2008-2013 repl. jobs	2,889	14,054	48,718
Median hourly earnings	\$21.43	\$17.91	\$14.56

## Focus Program Completions

"Completions" represents the total number of students to attain an award or degree at each given level in all the above college programs.

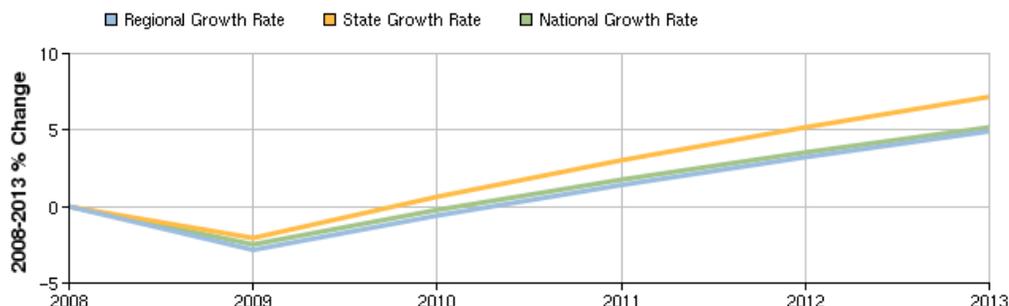
Award Level	2007 Completions (Foothill College)	2007 Completions (All Colleges in Region)
Award < 2 years	1	157
Associate's	2	283
Bachelor's	-	1025
Postbaccalaureate Certificate	-	11
Master's	-	305
Doctor's	-	-
Professional	-	-
<b>TOTAL</b>	<b>3</b>	<b>1781</b>

Source: U.S. Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System (IPEDS).

# Job Outlook Summary

## Percent Change in Employment, All Focus Occupations

This graph shows yearly percent growth compared to 2008.



The table summarizes the regional job outlook for the focus occupations using employment projections and current wage data, indicating the demand for these kinds of workers and their pay scale. Colleges which strive to be labor market responsive, maximize their economic impact, and generate a return on investment for public funds should generally focus program resources to support high-growth, high-wage occupations.

## Detailed Information by Occupation

Occupation Title	2008-13 Avg. Annual Openings			Median Hourly Earnings		
	Region	State[s]	U.S.	Region	State[s]	U.S.
Graphic designers	321	1,478	7,728	\$26.18	\$22.12	\$19.09
Multi-media artists and animators	221	1,256	3,714	\$20.24	\$17.92	\$11.43
Art directors	153	923	2,844	\$22.02	\$18.07	\$13.71
Artists and related workers, all other	115	709	2,185	\$9.53	\$8.74	\$8.00
Painting, coating, and decorating workers	6	44	305	\$19.96	\$13.05	\$11.87
Prepress technicians and workers	-5	44	434	\$21.71	\$19.10	\$16.48
<b>TOTAL</b>	<b>810</b>	<b>4,454</b>	<b>17,210</b>	<b>\$21.43</b>	<b>\$17.91</b>	<b>\$14.56</b>

Source: EMSI Complete Employment, 3/2008.

Average annual openings: total new plus replacement jobs over the entire timeframe divided by number of years in the timeframe.

1. Projected new and replacement jobs can indicate demand, but are not necessarily equivalent to demand. The number is based on past regional performance of the industries that employ workers in the given occupations, combined with official, biannual state and federal ten-year estimates. Projections may underestimate demand if employers need these kinds of workers but are unable to hire qualified individuals to meet their needs, or if unforeseen business recruitment and growth outpace past trends. Similarly, projections may overestimate demand if there are unforeseen contractions in key employers, entire industries, or the national economy as a whole.

# Regional Job Outlook

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The table summarizes the regional job outlook for the focus occupations using employment projections and current wage data, indicating the demand for these kinds of workers and their pay scale. Colleges which strive to be labor market responsive, maximize their economic impact, and generate a return on investment for public funds should generally focus program resources to support high-growth, high-wage occupations. Occupations are sorted by total 2008 jobs.

Occupation Title	2008 Jobs	2013 Jobs	New Jobs	New & Rep. Jobs	Median Hourly Earnings
Graphic designers	8,796	9,249	453	1,605	\$26.18
Multi-media artists and animators	5,087	5,611	524	1,104	\$20.24
Art directors	5,026	5,227	201	765	\$22.02
Artists and related workers, all other	3,345	3,545	200	574	\$9.53
Prepress technicians and workers	1,118	895	-223	-27	\$21.71
Painting, coating, and decorating workers	259	267	8	32	\$19.96
	<b>23,631</b>	<b>24,794</b>	<b>1,163</b>	<b>4,052</b>	<b>\$21.43</b>

Source: EMSI Complete Employment - Spring 2009.

# State & National Job Outlook

These two tables summarize the state and national job outlook for the focus occupations using employment projections and current wage data, indicating the demand for these kinds of workers and their pay scale. Occupations are in the same order as they are in the regional job outlook table on the previous page.

## State Job Outlook

Occupation Title	2008 Jobs	2013 Jobs	New Jobs	New & Rep. Jobs	Median Hourly Earnings
Graphic designers	37,638	40,072	2,434	7,389	\$22.12
Multi-media artists and animators	26,385	29,625	3,240	6,280	\$17.92
Art directors	23,956	25,844	1,888	4,615	\$18.07
Artists and related workers, all other	17,442	19,007	1,565	3,543	\$8.74
Prepress technicians and workers	6,289	5,417	-872	220	\$19.10
Painting, coating, and decorating workers	2,804	2,764	-40	222	\$13.05
	<b>114,513</b>	<b>122,728</b>	<b>8,215</b>	<b>22,269</b>	<b>\$17.91</b>

Source: EMSI Complete Employment - Spring 2009.

## National Job Outlook

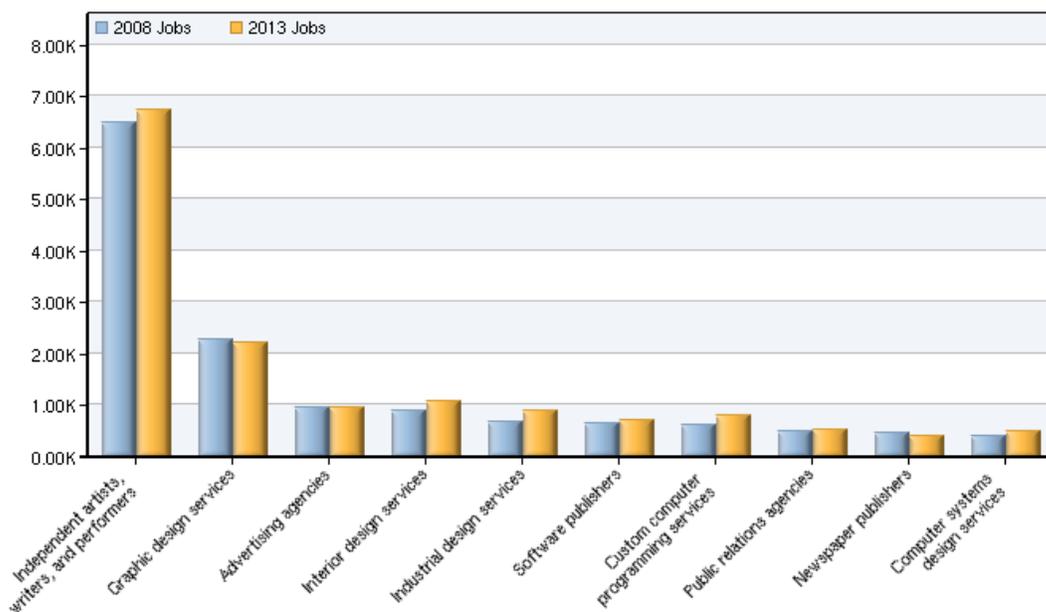
Occupation Title	2008 Jobs	2013 Jobs	New Jobs	New & Rep. Jobs	Median Hourly Earnings
Graphic designers	255,638	268,124	12,486	38,639	\$19.09
Art directors	130,798	141,295	10,497	14,222	\$13.71
Multi-media artists and animators	126,821	141,772	14,951	18,568	\$11.43
Artists and related workers, all other	103,476	113,258	9,782	10,923	\$8.00
Prepress technicians and workers	65,831	56,898	-8,933	2,172	\$16.48
Painting, coating, and decorating workers	37,860	36,409	-1,451	1,526	\$11.87
	<b>720,424</b>	<b>757,756</b>	<b>37,332</b>	<b>86,050</b>	<b>\$14.56</b>

Source: EMSI Complete Employment - Spring 2009.

# Inverse Staffing Patterns

## Industrial Makeup

These are your region's top ten growing industries in the selected occupations.



NAICS Code	Description	2008 Jobs	2013 Jobs	Change	% Change
711510	Independent artists, writers, and performers	6,478	6,754	276	4%
541430	Graphic design services	2,288	2,229	-59	-3%
541810	Advertising agencies	966	966	0	0%
541410	Interior design services	899	1,080	181	20%
541420	Industrial design services	671	882	211	32%
511210	Software publishers	633	723	90	14%
541511	Custom computer programming services	618	793	175	28%
541820	Public relations agencies	487	536	49	10%
511110	Newspaper publishers	456	410	-46	-10%
541512	Computer systems design services	392	495	103	26%

# Regional Graduation Summary

Regional graduations ("completions" or number of awards/degrees granted) in the programs tied to the focus occupations are one indicator of workforce supply. (Other sources include in-migration of new workers to the region, promotion from within firms, and currently unemployed workers in the same or similar occupations.) The following table breaks down these graduations by program and award level at AnyRegion college and at all institutions in the region. A zero entry for completers indicates the program is offered but had no completions, while a "-" indicates the program is not offered.

CIP Code	Program Title	Award Level	2007 Completions, Your College	2007 Completions, Entire Region
10.0301	Graphic Communications, General	Award of less than 1 academic year	-	9
		Award of at least 1 but less than 2 academic years	-	2
		Associate's degree	-	4
10.0302	Printing Management	[all]	-	-
10.0303	Prepress/Desktop Publishing and Digital Imaging Design	Award of less than 1 academic year	-	-
		Associate's degree	-	5
10.0304	Animation, Interactive Tech, Video Graphics and Special Effects	Award of less than 1 academic year	-	3
		Award of at least 1 but less than 2 academic years	-	5
		Associate's degree	-	9
		Award of at least 2 but less than 4 academic years	-	-
		Bachelor's degree	-	318
		Master's degree	-	75
10.0305	Graphic and Printing Equipment Operator, General Production	[all]	-	-
10.0306	Platemaker/Imager	[all]	-	-
10.0308	Computer Typography and Composition Equipment Operator	[all]	-	-
10.0399	Graphic Communications, Other	Award of at least 1 but less than 2 academic years	-	3
		Bachelor's degree	-	21
11.0801	Web Page, Digital/Multimedia and Information Resources Design	Award of less than 1 academic year	-	11
		Award of at least 1 but less than 2 academic years	-	-
		Associate's degree	-	4
		Bachelor's degree	-	5
		Master's degree	-	8
11.0803	Computer Graphics	Award of less than 1 academic year	-	4
		Award of at least 1 but less than 2 academic years	-	11
		Associate's degree	-	14
		Bachelor's degree	-	84
		Master's degree	-	28

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CIP Code	Program Title	Award Level	2007 Completions, Your College	2007 Completions, Entire Region
11.0899	Computer Software and Media Applications, Other	Award of less than 1 academic year	-	7
		Bachelor's degree	-	2
50.0101	Visual and Performing Arts, General	Award of less than 1 academic year	-	-
		Award of at least 1 but less than 2 academic years	-	2
		Associate's degree	-	18
		Bachelor's degree	-	23
50.0201	Crafts/Craft Design, Folk Art and Artisanry	[all]	-	-
50.0401	Design and Visual Communications, General	Award of less than 1 academic year	-	-
		Associate's degree	-	135
		Award of at least 2 but less than 4 academic years	-	-
		Bachelor's degree	-	7
		Postbaccalaureate certificate	-	1
		Master's degree	-	8
50.0402	Commercial and Advertising Art	Award of less than 1 academic year	-	1
		Associate's degree	-	4
		Bachelor's degree	-	54
		Master's degree	-	27
50.0404	Industrial Design	Associate's degree	-	1
		Bachelor's degree	-	54
		Master's degree	-	3
50.0409	Graphic Design	Award of less than 1 academic year	-	4
		Award of at least 1 but less than 2 academic years	-	39
		Associate's degree	1	50
		Bachelor's degree	-	143
		Master's degree	-	11
50.0410	Illustration	Associate's degree	-	6
		Bachelor's degree	-	84
		Master's degree	-	12
50.0702	Fine/Studio Arts, General	Bachelor's degree	-	100
		Master's degree	-	19
50.0705	Drawing	Award of less than 1 academic year	-	1
		Award of at least 1 but less than 2 academic years	-	1
		Associate's degree	-	5
50.0706	Intermedia/Multimedia	Bachelor's degree	-	5
50.0708	Painting	Bachelor's degree	-	68
		Postbaccalaureate certificate	-	8
		Master's degree	-	42
50.0710	Printmaking	Bachelor's degree	-	17
		Postbaccalaureate certificate	-	-
		Master's degree	-	7
50.0799	Fine Arts and Art Studies, Other	Associate's degree	-	4
		Bachelor's degree	-	29
		Master's degree	-	37
50.9999	Visual and Performing Arts, Other	Bachelor's degree	-	11
		Postbaccalaureate certificate	-	2
		Master's degree	-	14

## Regional Program Growth Report | Foothill College

CIP Code	Program Title	Award Level	2007 Completions, Your College	2007 Completions, Entire Region
9.0702	Digital Communication and Media/Multimedia	Award of less than 1 academic year	1	27
		Award of at least 1 but less than 2 academic years	-	27
		Associate's degree	1	24
		Award of at least 2 but less than 4 academic years	-	-
		Master's degree	-	14
1.0802	Agricultural Communication/Journalism	[all]	-	-
<b>TOTAL</b>			<b>3</b>	<b>1,781</b>

Source: U.S. Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System (IPEDS).

# Occupational Programs & Completers

The following section provides detailed information for each focus occupation, including the job outlook information provided above. Each occupation is also associated with one or more postsecondary programs (defined by standard CIP 2000 codes) using information published by the U.S. Department of Education with customizations by EMSI.

A zero entry for completers indicates the program is offered but had no completions, while a "-" indicates the program is not offered.

## Summary Table

Occupation	2008-2013 Avg. Annual Openings	2007 Completions, All Related Programs (College)	2007 Completions, All Related Programs (Region)	Total Related Programs	Total Occs. Sharing Same Programs
Graphic designers	321	1	720	8	12
Multi-media artists and animators	221	3	940	9	11
Art directors	153	1	252	2	7
Artists and related workers, all other	115	1	694	8	13
Painting, coating, and decorating workers	6	1	247	1	6
Prepress technicians and workers	-5	1	291	8	13

Source: EMSI Complete Employment; U.S. Department of Education, IPEDS & Occupational Code Crosswalk - CIP 2000.

An occupation may be related to multiple programs and vice versa. Completions may be double-counted if related to multiple occupations; **do not total**. See columns "Total Related Programs" and "Total Occs. Sharing Same Programs" to refine interpretation of openings versus completions.

## Detail Tables

The following tables provide detailed information for focus occupations and related programs, comparing estimated average annual openings in each occupation with recent completions (awards/degrees) in related programs at both AnyRegion College and at all institutions in the region. Many postsecondary programs are linked to multiple occupations; this is shown in the final column of each table and is one indication that fewer program completers will likely enter the given occupation than the overall total would suggest.

Sources for this section: EMSI Complete Employment, 3/2008; U.S. Department of Education, IPEDS.

### Art directors

2008-2013 Avg. Annual Openings: **153**

Median Hourly Earnings: **\$22.02**

Related Programs	2007 Completions, College	2007 Completions, Entire Region	Other Occupations Linked to Program
TOTAL, ALL RELATED PROGRAMS	1	252	7
Graphic Design	1	247	6
Intermedia/Multimedia	-	5	1

### Multi-media artists and animators

2008-2013 Avg. Annual Openings: **221**

Median Hourly Earnings: **\$20.24**

Related Programs	2007 Completions, College	2007 Completions, Entire Region	Other Occupations Linked to Program
TOTAL, ALL RELATED PROGRAMS	3	940	11
Digital Communication and Media/Multimedia	2	92	3
Animation, Interactive Technology, Video Graphics and Special Effects	-	410	-
Web Page, Digital/Multimedia and Information Resources Design	-	28	2
Computer Software and Media Applications, Other	-	9	-
Graphic Design	1	247	4
Drawing	-	7	2
Intermedia/Multimedia	-	5	-
Painting	-	118	-
Printmaking	-	24	-

### Artists and related workers, all other

2008-2013 Avg. Annual Openings: **115**

Median Hourly Earnings: **\$9.53**

Related Programs	2007 Completions, College	2007 Completions, Entire Region	Other Occupations Linked to Program
TOTAL, ALL RELATED PROGRAMS	1	694	13
Visual and Performing Arts, General	-	43	4
Crafts/Craft Design, Folk Art and Artisanry	-	-	-
Commercial and Advertising Art	-	86	2
Graphic Design	1	247	4
Illustration	-	102	2

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Related Programs	2007 Completions, College	2007 Completions, Entire Region	Other Occupations Linked to Program
Fine/Studio Arts, General	-	119	-
Fine Arts and Art Studies, Other	-	70	-
Visual and Performing Arts, Other	-	27	1

### Graphic designers

2008-2013 Avg. Annual Openings: **321**

Median Hourly Earnings: **\$26.18**

Related Programs	2007 Completions, College	2007 Completions, Entire Region	Other Occupations Linked to Program
TOTAL, ALL RELATED PROGRAMS	1	720	12
Agricultural Communication/Journalism	-	-	3
Web Page, Digital/Multimedia and Information Resources Design	-	28	2
Computer Graphics	-	141	-
Computer Software and Media Applications, Other	-	9	-
Design and Visual Communications, General	-	151	3
Commercial and Advertising Art	-	86	1
Industrial Design	-	58	-
Graphic Design	1	247	3

### Prepress technicians and workers

2008-2013 Avg. Annual Openings: **-5**

Median Hourly Earnings: **\$21.71**

Related Programs	2007 Completions, College	2007 Completions, Entire Region	Other Occupations Linked to Program
TOTAL, ALL RELATED PROGRAMS	1	291	13
Graphic Communications, General	-	15	1
Printing Management	-	-	2
Prepress/Desktop Publishing and Digital Imaging Design	-	5	1
Graphic and Printing Equipment Operator, General Production	-	-	2
Platemaker/Imager	-	-	-
Computer Typography and Composition Equipment Operator	-	-	-
Graphic Communications, Other	-	24	2
Graphic Design	1	247	5

### Painting, coating, and decorating workers

2008-2013 Avg. Annual Openings: **6**

Median Hourly Earnings: **\$19.96**

Related Programs	2007 Completions, College	2007 Completions, Entire Region	Other Occupations Linked to Program
TOTAL, ALL RELATED PROGRAMS	1	247	6
Graphic Design	1	247	6

# About the Data

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## Introduction

EMSI data is a compilation and harmonization of more than 80 government and private-sector sources. Updated every six months and based on the most recent data available, the dataset covers the entire US population and economy, down to each individual ZIP code. It includes data for industries, occupations, demographics, postsecondary institutions, and selected economic indicators.

## Occupation Data

Organizing regional employment information by occupation provides a workforce-oriented view of the regional economy. EMSI's occupation data are based on EMSI's industry data and regional "staffing patterns" (showing the average mix of job types in various industries) taken from the Occupational Employment Statistics program (U.S. Bureau of Labor Statistics). Wage information is augmented by data from the American Community Survey (U.S. Census). Replacement jobs and annual openings estimates are based on national survey data by occupation. As in the official government statistics, occupations are categorized by Standard Occupational Classification (SOC) codes and titles.

## Completions Data

Completions are voluntarily reported by postsecondary institutions through the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS). Completions are organized by program using the Classification of Instructional Programs (CIP) codes and titles.

## Relating Occupations to Postsecondary Programs

The occupation-to-program (SOC-to-CIP) "crosswalk" is a large table that describes which occupations are generally trained for by each standard postsecondary program (based on Classification of Instructional Programs [CIP] codes and titles, last updated in 2000). EMSI starts with the official crosswalk published by the U.S. Department of Education and customizes it in various ways to make it more accurate and practical for comparing programs to regional labor markets.

# About Economic Modeling Specialists

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## Products and Services

EMSI provides integrated regional economic and labor market data, web-based analysis tools, data-driven reports, and custom consulting services. EMSI specializes in detailed information about regional economies for assessment and planning purposes, bringing together industry, workforce, economic development, and education/training perspectives.

EMSI's expertise is centered on regional economics, data integration and analysis, programming, and design so that it can provide the best available products and services for regional decision makers. EMSI recently merged with its sister company CCbenefits Inc.-well known for conducting socioeconomic impact studies for over 800 community and technical colleges across the nation-to offer an integrated portfolio of solutions for college, workforce, and economic development professionals.

## Clients

EMSI's client base includes hundreds of colleges, workforce boards, economic development organizations, governmental agencies, economists, consultants, academics, and private-sector analysts. With over four thousand current clients in the U.S., Canada, and the United Kingdom, EMSI's products and services are critical for informing regional policy.

## Contact EMSI

For more information about EMSI, visit us at [www.economicmodeling.com](http://www.economicmodeling.com), or call us toll-free at 866.999.3674.