



CENTER OF EXCELLENCE  
FOR LABOR MARKET RESEARCH  
**ORANGE COUNTY**



ORANGE COUNTY SECTOR PROFILE  
SUPPLEMENTAL APPENDICES:  
**ADVANCED MANUFACTURING**

**2024**



**ORANGE COUNTY  
REGIONAL CONSORTIUM**

**WORKFORCE  
DEVELOPMENT ALLIANCE**



California  
Community  
Colleges

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# INTRODUCTION

The Orange County Center of Excellence for Labor Market Research (OC COE) is releasing a series of 12 sector profiles to provide a comprehensive analysis of Orange County's occupational landscape. This series dives into each of the 12 community college sectors, offering historical and projected occupational insights while building upon foundational research established through the Orange County Labor Market Overview.

In addition to the profiles themselves, supplemental appendices for each sector are being issued to provide detailed demand and supply data. The data in these appendices are presented to the region with the intent of being utilized for grant applications, project proposals, and the like. The full [Advanced Manufacturing Sector Profile](#) is available on the COE Website.

Occupations are denoted throughout this report in italics, with their corresponding SOC code in parentheses. Middle-skill occupations have no special notation however, below middle-skill occupations are denoted with an \* and above middle-skill occupations denoted with a ^. Occupations that are on U.S. News & World Report's 2024 100 Best Jobs list are denoted by a #, such as, *Mechanical Engineers (17-2141)^#*.

By examining this labor market data, in conjunction with the individual sector profiles, the OC COE seeks to highlight underlying dynamics and intricacies shaping each sector in Orange County. Community colleges and regional stakeholders can use this information for strategic planning and data-informed decision making to address workforce needs in this sector.

## APPENDIX D: ADVANCED MANUFACTURING DEMAND – LABOR MARKET DATA

Exhibit 22 shows the traditional labor market data points for all 104 occupations analyzed in the Advanced Manufacturing Sector Profile. Below middle-skill occupations are indicated with light shading, middle-skill occupations are denoted with medium shading, and above middle-skill occupations are indicated with dark shading.

**Exhibit 22: Occupational Demand for the 104 Advanced Manufacturing Occupations**

| Skill Level        | SOC     | Occupation   | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings | Typical Entry Level Education     | Work Experience Required | Typical On-The-Job Training       |
|--------------------|---------|--|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-------------------------|-----------------------------------|--------------------------|-----------------------------------|
| Below Middle-Skill | 51-2098 | Miscellaneous Assemblers and Fabricators*  | 17,101    | 18,198    | 1,097       | 6%            | 2,281           | \$16.09                 | \$17.72                | \$21.51                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 53-7064 | Packers and Packagers, Hand*   | 8,545     | 8,816     | 271         | 3%            | 1,394           | \$15.01                 | \$16.02                | \$17.33                 | No formal educational credential  | None                     | Short-term on-the-job training    |
|                    | 51-9199 | Production Workers, All Other*   | 7,748     | 8,041     | 294         | 4%            | 961             | \$16.25                 | \$16.71                | \$21.71                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-9111 | Packaging and Filling Machine Operators and Tenders*   | 3,707     | 3,853     | 146         | 4%            | 461             | \$16.47                 | \$17.66                | \$21.04                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-9198 | Helpers--Production Workers*   | 2,333     | 2,243     | (90)        | (4%)          | 353             | \$15.24                 | \$16.98                | \$19.21                 | High school diploma or equivalent | None                     | Short-term on-the-job training    |
|                    | 51-6031 | Sewing Machine Operators*  | 2,371     | 2,111     | (260)       | (11%)         | 278             | \$15.27                 | \$16.69                | \$18.10                 | No formal educational credential  | None                     | Short-term on-the-job training    |
|                    | 51-4072 | Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic* | 1,627     | 1,562     | (65)        | (4%)          | 163             | \$17.16                 | \$19.61                | \$22.74                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-3092 | Food Batchmakers*  | 885       | 945       | 60          | 7%            | 139             | \$15.04                 | \$15.97                | \$19.20                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-4193 | Plating Machine Setters, Operators, and Tenders, Metal and Plastic*                          | 1,021     | 924       | (97)        | (10%)         | 103             | \$17.90                 | \$19.15                | \$23.04                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-3099 | Food Processing Workers, All Other*  | 789       | 809       | 20          | 3%            | 92              | \$14.75                 | \$16.21                | \$17.44                 | No formal educational credential  | None                     | Moderate-term on-the-job training |

| Skill Level        | SOC  | Occupation  | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings           | Typical Entry Level Education     | Work Experience Required          | Typical On-The-Job Training       |
|--------------------|--|---|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Below Middle-Skill | 51-9023  | Mixing and Blending Machine Setters, Operators, and Tenders*                          | 748       | 764       | 16          | 2%            | 87              | \$17.97                 | \$22.64                | \$28.04                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|                    | 53-7063  | Machine Feeders and Offbearers*   | 464       | 452       | (12)        | (3%)          | 76              | \$16.57                 | \$18.87                | \$22.53                           | No formal educational credential  | None                              | Short-term on-the-job training    |
|                    | 51-3022  | Meat, Poultry, and Fish Cutters and Trimmers*   | 571       | 569       | (3)         | 0%            | 72              | \$14.06                 | \$14.77                | \$16.73                           | No formal educational credential  | None                              | Short-term on-the-job training    |
|                    | 51-4023  | Rolling Machine Setters, Operators, and Tenders, Metal and Plastic*                   | 680       | 632       | (48)        | (7%)          | 71              | \$19.24                 | \$23.84                | \$25.14                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|                    | 43-5111  | Weighers, Measurers, Checkers, and Samplers, Recordkeeping*                           | 579       | 567       | (12)        | (2%)          | 66              | \$16.85                 | \$18.14                | \$21.21                           | High school diploma or equivalent | None                              | Short-term on-the-job training    |
|                    | 51-9032  | Cutting and Slicing Machine Setters, Operators, and Tenders*                          | 505       | 483       | (22)        | (4%)          | 64              | \$16.98                 | \$18.90                | \$24.33                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|                    | 51-9041  | Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders* | 573       | 529       | (43)        | (8%)          | 56              | \$18.23                 | \$19.33                | \$24.06                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|                    | 51-4021  | Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic*     | 527       | 484       | (43)        | (8%)          | 55              | \$16.94                 | \$19.15                | \$23.02                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|                    | 51-9022  | Grinding and Polishing Workers, Hand*   | 434       | 389       | (45)        | (10%)         | 46              | \$16.62                 | \$18.03                | \$19.69                           | No formal educational credential  | None                              | Moderate-term on-the-job training |
|                    | 51-6099  | Textile, Apparel, and Furnishings Workers, All Other*                                 | 445       | 377       | (68)        | (15%)         | 45              | \$15.64                 | \$16.11                | \$17.74                           | High school diploma or equivalent | None                              | Short-term on-the-job training    |
| 51-9012            | Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders* | 373   | 391       | 18        | 5%          | 44            | \$18.41         | \$21.52                 | \$27.48                | High school diploma or equivalent | None                              | Moderate-term on-the-job training |                                   |

| Skill Level        | SOC     | Occupation   | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings | Typical Entry Level Education     | Work Experience Required | Typical On-The-Job Training       |
|--------------------|---------|--|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-------------------------|-----------------------------------|--------------------------|-----------------------------------|
| Below Middle-Skill | 51-9196 | Paper Goods Machine Setters, Operators, and Tenders*                       | 351       | 336       | (15)        | (4%)          | 42              | \$18.67                 | \$22.57                | \$29.72                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-7021 | Furniture Finishers*   | 271       | 276       | 5           | 2%            | 40              | \$18.16                 | \$22.09                | \$25.17                 | High school diploma or equivalent | None                     | Short-term on-the-job training    |
|                    | 51-5113 | Print Binding and Finishing Workers*                                       | 263       | 267       | 4           | 2%            | 29              | \$18.04                 | \$19.97                | \$24.37                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-2041 | Structural Metal Fabricators and Fitters*                                  | 280       | 265       | (14)        | (5%)          | 27              | \$17.47                 | \$23.82                | \$29.62                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-9021 | Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders* | 228       | 222       | (6)         | (3%)          | 25              | \$17.62                 | \$18.46                | \$22.04                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-2031 | Engine and Other Machine Assemblers*                                       | 175       | 167       | (8)         | (4%)          | 24              | \$19.48                 | \$23.49                | \$26.75                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-9151 | Photographic Process Workers and Processing Machine Operators*             | 137       | 141       | 4           | 3%            | 21              | \$14.66                 | \$19.60                | \$31.92                 | High school diploma or equivalent | None                     | Short-term on-the-job training    |
|                    | 51-3023 | Slaughterers and Meat Packers*   | 163       | 150       | (13)        | (8%)          | 20              | \$14.46                 | \$14.78                | \$15.77                 | No formal educational credential  | None                     | Short-term on-the-job training    |
|                    | 51-4022 | Forging Machine Setters, Operators, and Tenders, Metal and Plastic*        | 186       | 164       | (23)        | (12%)         | 19              | \$18.06                 | \$23.96                | \$31.66                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-6062 | Textile Cutting Machine Setters, Operators, and Tenders*                   | 146       | 133       | (13)        | (9%)          | 19              | \$16.42                 | \$16.94                | \$19.37                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-6063 | Textile Knitting and Weaving Machine Setters, Operators, and Tenders*      | 148       | 114       | (34)        | (23%)         | 18              | \$16.46                 | \$18.02                | \$20.10                 | High school diploma or equivalent | None                     | Short-term on-the-job training    |
|                    | 51-9192 | Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders*     | 157       | 156       | (1)         | (1%)          | 18              | \$15.07                 | \$17.19                | \$19.54                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-9197 | Tire Builders*   | 203       | 145       | (58)        | (28%)         | 18              | \$18.68                 | \$21.99                | \$23.00                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |

| Skill Level        | SOC     | Occupation  | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings | Typical Entry Level Education     | Work Experience Required | Typical On-The-Job Training       |
|--------------------|---------|---|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-------------------------|-----------------------------------|--------------------------|-----------------------------------|
| Below Middle-Skill | 53-7011 | Conveyor Operators and Tenders*   | 120       | 130       | 9           | 8%            | 18              | \$17.46                 | \$18.94                | \$20.10                 | No formal educational credential  | None                     | Short-term on-the-job training    |
|                    | 51-2021 | Coil Winders, Tapers, and Finishers*  | 154       | 138       | (16)        | (11%)         | 17              | \$16.30                 | \$19.00                | \$22.21                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-4191 | Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic*         | 150       | 143       | (7)         | (5%)          | 15              | \$17.94                 | \$21.64                | \$26.85                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-6061 | Textile Bleaching and Dyeing Machine Operators and Tenders*                         | 116       | 100       | (16)        | (14%)         | 15              | \$15.44                 | \$16.48                | \$16.70                 | High school diploma or equivalent | None                     | Short-term on-the-job training    |
|                    | 51-9123 | Painting, Coating, and Decorating Workers*  | 145       | 145       | 0           | 0%            | 15              | \$16.12                 | \$19.58                | \$34.18                 | No formal educational credential  | None                     | Moderate-term on-the-job training |
|                    | 51-4192 | Layout Workers, Metal and Plastic*  | 107       | 111       | 4           | 3%            | 12              | \$21.26                 | \$27.49                | \$34.73                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-4051 | Metal-Refining Furnace Operators and Tenders*                                       | 105       | 96        | (9)         | (9%)          | 11              | \$19.83                 | \$21.83                | \$30.02                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-4194 | Tool Grinders, Filers, and Sharpeners*  | 102       | 93        | (9)         | (9%)          | 10              | \$18.25                 | \$18.41                | \$23.48                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-2051 | Fiberglass Laminators and Fabricators*  | 83        | 79        | (4)         | (5%)          | 9               | \$18.10                 | \$20.62                | \$23.64                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-9031 | Cutters and Trimmers, Hand*   | 71        | 64        | (7)         | (10%)         | 9               | \$15.45                 | \$16.54                | \$19.66                 | No formal educational credential  | None                     | Short-term on-the-job training    |
|                    | 51-9194 | Etchers and Engravers*  | 81        | 80        | (1)         | (2%)          | 9               | \$15.62                 | \$17.57                | \$20.08                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-6064 | Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders* | 54        | 55        | 1           | 1%            | 8               | \$14.75                 | \$14.88                | \$17.42                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |

| Skill Level        | SOC     | Occupation   | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings | Typical Entry Level Education     | Work Experience Required | Typical On-The-Job Training       |
|--------------------|---------|--|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-------------------------|-----------------------------------|--------------------------|-----------------------------------|
| Below Middle-Skill | 51-9191 | Adhesive Bonding Machine Operators and Tenders*  | 64        | 63        | (1)         | (1%)          | 8               | \$21.25                 | \$21.87                | \$25.55                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-4071 | Foundry Mold and Coremakers*   | 70        | 61        | (9)         | (13%)         | 7               | \$18.96                 | \$19.86                | \$22.07                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-9051 | Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders*  | 63        | 61        | (2)         | (3%)          | 7               | \$17.45                 | \$17.72                | \$18.74                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-3091 | Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders*                         | 41        | 45        | 4           | 10%           | 6               | \$16.00                 | \$17.26                | \$20.02                 | No formal educational credential  | None                     | Moderate-term on-the-job training |
|                    | 51-3093 | Food Cooking Machine Operators and Tenders*  | 18        | 22        | 4           | 23%           | 5               | \$14.82                 | \$16.85                | \$20.12                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-6091 | Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers*           | 29        | 32        | 2           | 9%            | 4               | \$21.39                 | \$23.63                | \$30.86                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-9193 | Cooling and Freezing Equipment Operators and Tenders*  | 27        | 27        | 0           | 2%            | 3               | \$17.12                 | \$19.27                | \$22.52                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-4052 | Pourers and Casters, Metal*  | 20        | 18        | (2)         | (8%)          | 2               | \$17.90                 | \$19.88                | \$21.20                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-2061 | Timing Device Assemblers and Adjusters*  | <10       | <10       | Insf. Data  | Insf. Data    | 1               | Insf. Data              | Insf. Data             | Insf. Data              | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
| Middle-Skill       | 51-2028 | Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers | 5,648     | 5,533     | (115)       | (2%)          | 639             | \$17.45                 | \$19.40                | \$24.13                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|                    | 51-1011 | First-Line Supervisors of Production and Operating Workers   | 5,682     | 5,706     | 24          | 0%            | 601             | \$24.41                 | \$31.59                | \$43.47                 | High school diploma or equivalent | Less than 5 years        | None                              |
|                    | 51-4041 | Machinists   | 4,384     | 4,312     | (73)        | (2%)          | 461             | \$18.68                 | \$23.12                | \$29.46                 | High school diploma or equivalent | None                     | Long-term on-the-job training     |



| Skill Level  | SOC                                      | Occupation  | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings           | Typical Entry Level Education     | Work Experience Required          | Typical On-The-Job Training       |
|--------------|--|---|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Middle-Skill | 51-4121                                  | Welders, Cutters, Solderers, and Brazers  | 3,616     | 3,611     | (5)         | 0%            | 398             | \$20.27                 | \$23.59                | \$29.76                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 49-9041                                  | Industrial Machinery Mechanics  | 2,481     | 2,658     | 177         | 7%            | 260             | \$24.22                 | \$30.66                | \$38.64                           | High school diploma or equivalent | None                              | Long-term on-the-job training     |
|              | 51-9161                                  | Computer Numerically Controlled Tool Operators  | 2,303     | 2,161     | (142)       | (6%)          | 233             | \$17.86                 | \$22.72                | \$28.13                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 51-5112                                  | Printing Press Operators  | 2,148     | 1,962     | (186)       | (9%)          | 227             | \$17.43                 | \$19.55                | \$24.58                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 51-4033                                  | Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 1,575     | 1,437     | (138)       | (9%)          | 192             | \$17.17                 | \$18.48                | \$22.84                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 17-3023                                  | Electrical and Electronic Engineering Technologists and Technicians                                       | 1,689     | 1,667     | (22)        | (1%)          | 181             | \$28.70                 | \$34.49                | \$42.51                           | Associate degree                  | None                              | None                              |
|              | 51-9083                                  | Ophthalmic Laboratory Technicians   | 853       | 890       | 37          | 4%            | 123             | \$17.22                 | \$20.79                | \$29.89                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 51-4031                                  | Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic                   | 1,177     | 1,126     | (51)        | (4%)          | 121             | \$17.95                 | \$21.73                | \$23.55                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 17-3029                                  | Engineering Technologists and Technicians, Except Drafters, All Other                                     | 1,086     | 1,115     | 29          | 3%            | 114             | \$23.37                 | \$30.63                | \$41.48                           | Associate degree                  | None                              | None                              |
|              | 51-4081                                  | Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic                                  | 751       | 833       | 81          | 11%           | 100             | \$17.66                 | \$18.40                | \$22.14                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
| 51-9011      | Chemical Equipment Operators and Tenders | 690   | 683       | (7)       | (1%)        | 72            | \$19.01         | \$23.04                 | \$29.05                | High school diploma or equivalent | None                              | Moderate-term on-the-job training |                                   |

| Skill Level  | SOC     | Occupation  | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings | Typical Entry Level Education     | Work Experience Required | Typical On-The-Job Training       |
|--------------|---------|---|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-------------------------|-----------------------------------|--------------------------|-----------------------------------|
| Middle-Skill | 51-4034 | Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 509       | 444       | (66)        | (13%)         | 65              | \$18.28                 | \$23.91                | \$29.95                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|              | 17-3013 | Mechanical Drafters   | 568       | 552       | (15)        | (3%)          | 52              | \$24.58                 | \$35.23                | \$42.19                 | Associate degree                  | None                     | None                              |
|              | 17-3027 | Mechanical Engineering Technologists and Technicians                              | 508       | 517       | 9           | 2%            | 52              | \$27.73                 | \$34.11                | \$39.50                 | Associate degree                  | None                     | None                              |
|              | 51-9141 | Semiconductor Processing Technicians  | 419       | 421       | 2           | 1%            | 48              | \$18.80                 | \$20.86                | \$25.66                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|              | 49-9043 | Maintenance Workers, Machinery  | 368       | 400       | 32          | 9%            | 47              | \$23.04                 | \$30.34                | \$37.21                 | High school diploma or equivalent | None                     | Long-term on-the-job training     |
|              | 51-9162 | Computer Numerically Controlled Tool Programmers                                  | 400       | 422       | 21          | 5%            | 47              | \$28.35                 | \$37.88                | \$41.34                 | Postsecondary nondegree award     | None                     | Moderate-term on-the-job training |
|              | 17-3026 | Industrial Engineering Technologists and Technicians                              | 380       | 413       | 33          | 9%            | 45              | \$28.60                 | \$38.39                | \$49.93                 | Associate degree                  | None                     | None                              |
|              | 49-9069 | Precision Instrument and Equipment Repairers, All Other                           | 429       | 430       | 1           | 0%            | 45              | \$27.92                 | \$33.83                | \$40.03                 | High school diploma or equivalent | None                     | Long-term on-the-job training     |
|              | 49-2094 | Electrical and Electronics Repairers, Commercial and Industrial Equipment         | 466       | 467       | 1           | 0%            | 43              | \$24.13                 | \$32.76                | \$47.94                 | Postsecondary nondegree award     | None                     | Long-term on-the-job training     |
|              | 51-4122 | Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders           | 392       | 387       | (5)         | (1%)          | 43              | \$18.21                 | \$23.14                | \$29.55                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|              | 49-9031 | Home Appliance Repairers  | 422       | 401       | (21)        | (5%)          | 42              | \$15.54                 | \$21.61                | \$28.22                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|              | 51-4199 | Metal Workers and Plastic Workers, All Other                                      | 407       | 391       | (16)        | (4%)          | 42              | \$15.98                 | \$18.03                | \$21.67                 | High school diploma or equivalent | None                     | Moderate-term on-the-job training |
|              | 51-4111 | Tool and Die Makers   | 358       | 358       | 0           | 0%            | 40              | \$28.61                 | \$33.14                | \$40.58                 | Postsecondary nondegree award     | None                     | Long-term on-the-job training     |

| Skill Level  | SOC                                 | Occupation  | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings           | Typical Entry Level Education     | Work Experience Required          | Typical On-The-Job Training       |
|--------------|-------------------------------------|---|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Middle-Skill | 51-5111                             | Prepress Technicians and Workers  | 311       | 275       | (35)        | (11%)         | 39              | \$17.61                 | \$22.93                | \$27.73                           | Postsecondary nondegree award     | None                              | None                              |
|              | 51-9195                             | Molders, Shapers, and Casters, Except Metal and Plastic                             | 355       | 353       | (2)         | (1%)          | 39              | \$17.55                 | \$21.47                | \$25.57                           | High school diploma or equivalent | None                              | Long-term on-the-job training     |
|              | 51-4035                             | Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic      | 265       | 225       | (40)        | (15%)         | 34              | \$19.90                 | \$23.68                | \$29.19                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 17-3012                             | Electrical and Electronics Drafters   | 342       | 347       | 5           | 1%            | 33              | \$27.57                 | \$33.59                | \$41.37                           | Associate degree                  | None                              | None                              |
|              | 49-9044                             | Millwrights   | 230       | 258       | 28          | 12%           | 27              | \$23.14                 | \$29.56                | \$36.63                           | High school diploma or equivalent | None                              | Apprenticeship                    |
|              | 51-4032                             | Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 180       | 154       | (26)        | (14%)         | 23              | \$17.93                 | \$21.73                | \$31.55                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 17-3024                             | Electro-Mechanical and Mechatronics Technologists and Technicians                   | 186       | 184       | (2)         | (1%)          | 18              | \$23.93                 | \$30.91                | \$39.28                           | Associate degree                  | None                              | None                              |
|              | 49-9012                             | Control and Valve Installers and Repairers, Except Mechanical Door                  | 235       | 217       | (18)        | (8%)          | 18              | \$25.50                 | \$36.55                | \$43.88                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 19-5012                             | Occupational Health and Safety Technicians  | 140       | 150       | 9           | 7%            | 17              | \$21.87                 | \$30.39                | \$40.99                           | High school diploma or equivalent | None                              | Moderate-term on-the-job training |
|              | 17-3028                             | Calibration Technologists and Technicians   | 107       | 112       | 4           | 4%            | 12              | \$20.82                 | \$23.49                | \$32.51                           | Associate degree                  | None                              | None                              |
|              | 49-2092                             | Electric Motor, Power Tool, and Related Repairers                                   | 123       | 124       | 1           | 1%            | 10              | \$20.91                 | \$25.71                | \$31.47                           | High school diploma or equivalent | Less than 5 years                 | Moderate-term on-the-job training |
| 51-8091      | Chemical Plant and System Operators | 32  | 33        | 1         | 3%          | 4             | \$43.61         | \$45.63                 | \$47.68                | High school diploma or equivalent | None                              | Moderate-term on-the-job training |                                   |

| Skill Level        | SOC     | Occupation                                  | 2022 Jobs | 2027 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Pct. 25 Hourly Earnings | Median Hourly Earnings | Pct. 75 Hourly Earnings | Typical Entry Level Education | Work Experience Required | Typical On-The-Job Training |
|--------------------|---------|---|-----------|-----------|-------------|---------------|-----------------|-------------------------|------------------------|-------------------------|-------------------------------|--------------------------|-----------------------------|
| Above Middle-Skill | 17-2112 | Industrial Engineers^                       | 3,205     | 3,464     | 259         | 8%            | 255             | \$40.38                 | \$50.25                | \$64.51                 | Bachelor's degree             | None                     | None                        |
|                    | 17-2071 | Electrical Engineers^                       | 3,151     | 3,203     | 51          | 2%            | 208             | \$45.85                 | \$62.72                | \$80.56                 | Bachelor's degree             | None                     | None                        |
|                    | 17-2141 | Mechanical Engineers^#                      | 3,119     | 3,195     | 77          | 2%            | 205             | \$39.35                 | \$50.64                | \$65.02                 | Bachelor's degree             | None                     | None                        |
|                    | 19-5011 | Occupational Health and Safety Specialists^ | 1,052     | 1,102     | 50          | 5%            | 121             | \$35.13                 | \$43.17                | \$50.29                 | Bachelor's degree             | None                     | None                        |
|                    | 17-2061 | Computer Hardware Engineers^                | 1,170     | 1,180     | 9           | 1%            | 76              | \$27.27                 | \$57.21                | \$81.50                 | Bachelor's degree             | None                     | None                        |
|                    | 27-1021 | Commercial and Industrial Designers^        | 840       | 837       | (3)         | 0%            | 74              | \$28.63                 | \$38.59                | \$50.07                 | Bachelor's degree             | None                     | None                        |
|                    | 17-2131 | Materials Engineers^                        | 339       | 339       | 0           | 0%            | 23              | \$41.52                 | \$50.61                | \$63.50                 | Bachelor's degree             | None                     | None                        |
|                    | 19-2099 | Physical Scientists, All Other^             | 240       | 255       | 15          | 6%            | 22              | \$40.02                 | \$50.47                | \$84.41                 | Bachelor's degree             | None                     | None                        |
|                    | 17-2041 | Chemical Engineers^                         | 88        | 96        | 9           | 10%           | 7               | \$41.35                 | \$51.88                | \$69.06                 | Bachelor's degree             | None                     | None                        |
|                    | 19-2032 | Materials Scientists^                       | 48        | 52        | 4           | 8%            | 5               | \$31.72                 | \$35.82                | \$42.27                 | Bachelor's degree             | None                     | None                        |

## APPENDIX E: ADVANCED MANUFACTURING SUPPLY – COMMUNITY COLLEGE AND NON-COMMUNITY COLLEGE AWARDS

This appendix provides labor market supply information, which equates to educational awards, for the Advanced Manufacturing sector.

Exhibit 23 shows the distribution of community college awards in Orange County by program in the Advanced Manufacturing sector.

**Exhibit 23: Advanced Manufacturing Community College Awards by Program, 2020-2023**

| TOP     | Program   | 2020-2021<br>Awards | 2021-2022<br>Awards | 2022-2023<br>Awards | 3-Year<br>Award<br>Average |
|---------|---|---------------------|---------------------|---------------------|----------------------------|
| 0924.00 | Engineering Technology, General                         | 5                   | -                   | -                   | 2                          |
| 0934.00 | Electronics and Electric Technology                     | 96                  | 85                  | 56                  | 79                         |
| 0934.10 | Computer Electronics                                    | 26                  | 12                  | 8                   | 15                         |
| 0934.20 | Industrial Electronics                                  | -                   | -                   | 1                   | 0                          |
| 0934.80 | Laser and Optical Technology                            | 6                   | 6                   | 1                   | 4                          |
| 0935.00 | Electro-Mechanical Technology                           | -                   | 4                   | 8                   | 4                          |
| 0935.10 | Appliance Repair  | -                   | -                   | -                   | -                          |
| 0936.00 | Printing and Lithography                                | 1                   | 4                   | -                   | 2                          |
| 0943.00 | Instrumentation Technology                              | -                   | -                   | -                   | -                          |
| 0943.30 | Vacuum Technology                                       | -                   | -                   | -                   | -                          |
| 0945.00 | Industrial Systems Technology and Maintenance           | 2                   | -                   | 14                  | 5                          |
| 0947.20 | Heavy Equipment Maintenance                             | 17                  | 16                  | 17                  | 17                         |
| 0950.00 | Aeronautical and Aviation Technology                    | 29                  | 37                  | 35                  | 34                         |
| 0950.40 | Aircraft Electronics (Avionics)                         | -                   | -                   | 1                   | 0                          |
| 0950.50 | Aircraft Fabrication                                    | -                   | -                   | -                   | -                          |
| 0953.00 | Drafting Technology                                     | 51                  | 32                  | 68                  | 50                         |
| 0953.30 | Electrical, Electronic, and Electro-Mechanical Drafting | -                   | -                   | -                   | -                          |
| 0953.40 | Mechanical Drafting                                     | 3                   | 18                  | 15                  | 12                         |
| 0953.60 | Technical Illustration                                  | -                   | -                   | -                   | -                          |
| 0954.20 | Plastics and Composites                                 | -                   | -                   | -                   | -                          |
| 0954.30 | Petroleum Technology                                    | -                   | -                   | -                   | -                          |
| 0956.00 | Manufacturing and Industrial Technology                 | 42                  | 39                  | 19                  | 33                         |
| 0956.30 | Machining and Machine Tools                             | 117                 | 108                 | 74                  | 100                        |

| TOP                  | Program                                       | 2020-2021 Awards | 2021-2022 Awards | 2022-2023 Awards | 3-Year Award Average |
|----------------------|---|------------------|------------------|------------------|----------------------|
| 0956.40              | Sheet Metal and Structural Metal              | -                | -                | -                | -                    |
| 0956.50              | Welding Technology                            | 117              | 57               | 91               | 88                   |
| 0956.70              | Industrial and Occupational Safety and Health | -                | -                | -                | -                    |
| 0956.80              | Industrial Quality Control                    | -                | -                | -                | -                    |
| 0957.30              | Surveying                                     | 59               | 25               | 99               | 61                   |
| 0961.00              | Optics  | -                | -                | -                | -                    |
| 1303.30              | Fashion Production                            | 8                | 22               | 14               | 15                   |
| 1920.00              | Ocean Technology                              | -                | -                | -                | -                    |
| <b>Total/Average</b> |   | <b>579</b>       | <b>465</b>       | <b>521</b>       | <b>522</b>           |

Exhibit 24 details Advanced Manufacturing sector supply award counts by Orange County community college.

**Exhibit 24: Advanced Manufacturing Community College Awards by College, 2020-2023**

| College              | 2020-2021 Awards | 2021-2022 Awards | 2022-2023 Awards | 3-Year Award Average |
|----------------------|------------------|------------------|------------------|----------------------|
| Coastline            | 53               | 44               | 23               | 40                   |
| Cypress              | -                | -                | -                | -                    |
| Fullerton            | 41               | 34               | 21               | 32                   |
| Golden West          | 4                | 3                | 4                | 4                    |
| Irvine Valley        | 28               | 41               | 22               | 30                   |
| North Orange Adult   | -                | -                | -                | -                    |
| Orange Coast         | 102              | 109              | 97               | 103                  |
| Saddleback           | 49               | 39               | 36               | 41                   |
| Santa Ana            | 229              | 163              | 199              | 197                  |
| Santiago Canyon      | 73               | 32               | 119              | 75                   |
| <b>Total/Average</b> | <b>579</b>       | <b>465</b>       | <b>521</b>       | <b>522</b>           |

Exhibit 25 provides the number of Advanced Manufacturing sector awards conferred by non-community college programs.

**Exhibit 25: Advanced Manufacturing Non-Community College Awards by Program, 2019-2022**

| CIP                  | Program  | 2019-2020 Awards | 2020-2021 Awards | 2021-2022 Awards | 3-Year Award Average |
|----------------------|--|------------------|------------------|------------------|----------------------|
| 14.0701              | Chemical Engineering   | 86               | 76               | 107              | 90                   |
| 14.0901              | Computer Engineering, General  | 350              | 297              | 321              | 323                  |
| 14.1001              | Electrical and Electronics Engineering                                   | 336              | 267              | 247              | 283                  |
| 14.1801              | Materials Engineering  | 51               | 58               | 60               | 56                   |
| 14.1901              | Mechanical Engineering   | 577              | 568              | 474              | 540                  |
| 14.3601              | Manufacturing Engineering  | 9                | 6                | 5                | 7                    |
| 15.0399              | Electrical/Electronic Engineering Technologies/Technicians, Other        | 1                | -                | -                | 0                    |
| 48.0510              | Computer Numerically Controlled (CNC) Machinist Technology/CNC Machinist | 4                | -                | -                | 1                    |
| 50.0404              | Industrial and Product Design  | 1                | -                | 90               | 30                   |
| 51.2202              | Environmental Health   | 5                | 2                | 6                | 4                    |
| <b>Total/Average</b> |  | <b>1,420</b>     | <b>1,274</b>     | <b>1,310</b>     | <b>1,335</b>         |

Note: CIP 15.0401 Biomedical Technology/Technician, which crosswalks to occupations in this sector, has been removed because it more closely aligns with the Life Sciences & Biotechnology sector.

Exhibit 26 includes the number of Advanced Manufacturing sector awards conferred by non-community college institutions.

**Exhibit 26: Advanced Manufacturing Non-Community College Awards by Institution, 2019-2022**

| Institution                                 | 2019-2020 Awards | 2020-2021 Awards | 2021-2022 Awards | 3-Year Award Average |
|---|------------------|------------------|------------------|----------------------|
| California Career School                    | 4                | -                | -                | 1                    |
| California State University-Fullerton       | 454              | 362              | 412              | 409                  |
| Chapman University                          | -                | -                | 2                | 1                    |
| Southern California Institute of Technology | 57               | 45               | 18               | 40                   |
| University of California-Irvine             | 905              | 867              | 878              | 883                  |
| <b>Total/Average</b>                        | <b>1,420</b>     | <b>1,274</b>     | <b>1,310</b>     | <b>1,335</b>         |

## APPENDIX F: ADVANCED MANUFACTURING CIP CODES

This appendix provides the list of CIP codes that crosswalk to the occupations in the Advanced Manufacturing sector but did not have any supply (Exhibit 27).

**Exhibit 27: List of CIP with no Supply in Orange County**

| CIP     | Program  | CIP     | Program  |
|---------|--|---------|--|
| 01.1003 | Brewing Science  | 14.4101 | Electromechanical Engineering  |
| 01.1004 | Viticulture and Enology  | 14.4301 | Biochemical Engineering  |
| 01.1005 | Zymology/Fermentation Science                                  | 14.4401 | Engineering Chemistry  |
| 10.0301 | Graphic Communications, General                                | 14.4701 | Electrical and Computer Engineering  |
| 10.0302 | Printing Management  | 15.0000 | Engineering Technologies/Technicians, General  |
| 10.0303 | Prepress/Desktop Publishing and Digital Imaging Design         | 15.0001 | Applied Engineering Technologies/Technicians   |
| 10.0305 | Graphic and Printing Equipment Operator, General Production    | 15.0101 | Architectural Engineering Technologies/Technicians   |
| 10.0306 | Platemaker/Imager  | 15.0303 | Electrical, Electronic, and Communications Engineering Technology/Technician               |
| 10.0307 | Printing Press Operator  | 15.0304 | Laser and Optical Technology/Technician  |
| 10.0308 | Computer Typography and Composition Equipment Operator         | 15.0305 | Telecommunications Technology/Technician   |
| 10.0399 | Graphic Communications, Other                                  | 15.0306 | Integrated Circuit Design Technology/Technician  |
| 12.0506 | Meat Cutting/Meat Cutter                                       | 15.0307 | Audio Engineering Technology/Technician  |
| 14.0601 | Ceramic Sciences and Engineering                               | 15.0403 | Electromechanical/Electromechanical Engineering Technology/Technician                      |
| 14.0702 | Chemical and Biomolecular Engineering                          | 15.0404 | Instrumentation Technology/Technician  |
| 14.0799 | Chemical Engineering, Other                                    | 15.0405 | Robotics Technology/Technician   |
| 14.0902 | Computer Hardware Engineering                                  | 15.0406 | Automation Engineer Technology/Technician  |
| 14.1099 | Electrical, Electronics, and Communications Engineering, Other | 15.0407 | Mechatronics, Robotics, and Automation Engineering Technology/Technician                   |
| 14.1101 | Engineering Mechanics  | 15.0499 | Electromechanical Technologies/Technicians, Other  |
| 14.2001 | Metallurgical Engineering                                      | 15.0501 | Heating, Ventilation, Air Conditioning and Refrigeration Engineering Technology/Technician |
| 14.2701 | Systems Engineering  | 15.0599 | Environmental Control Technologies/Technicians, Other                                      |
| 14.2801 | Textile Sciences and Engineering                               | 15.0607 | Plastics and Polymer Engineering Technology/Technician                                     |
| 14.3201 | Polymer/Plastics Engineering                                   | 15.0611 | Metallurgical Technology/Technician  |
| 14.3501 | Industrial Engineering   | 15.0612 | Industrial Technology/Technician   |
| 14.4001 | Paper Science and Engineering                                  |         |  |



| <b>CIP</b> | <b>Program</b>  | <b>CIP</b> | <b>Program</b>  |
|------------|---|------------|---|
| 15.0613    | Manufacturing Engineering Technology/Technician                     | 15.1501    | Engineering/Industrial Management   |
| 15.0614    | Welding Engineering Technology/Technician                           | 15.1503    | Packaging Science   |
| 15.0615    | Chemical Engineering Technology/Technician                          | 15.1701    | Energy Systems Technology/Technician  |
| 15.0616    | Semiconductor Manufacturing Technology/Technician                   | 15.1702    | Power Plant Technology/Technician   |
| 15.0617    | Composite Materials Technology/Technician                           | 15.1703    | Solar Energy Technology/Technician  |
| 15.0699    | Industrial Production Technologies/Technicians, Other               | 15.1704    | Wind Energy Technology/Technician   |
| 15.0701    | Occupational Safety and Health Technology/Technician                | 15.1705    | Hydroelectric Energy Technology/Technician  |
| 15.0703    | Industrial Safety Technology/Technician                             | 15.1706    | Geothermal Energy Technology/Technician   |
| 15.0705    | Process Safety Technology/Technician                                | 15.1799    | Energy Systems Technologies/Technicians, Other  |
| 15.0801    | Aeronautical/Aerospace Engineering Technology/Technician            | 19.0904    | Textile Science   |
| 15.0803    | Automotive Engineering Technology/Technician                        | 26.1006    | Environmental Toxicology  |
| 15.0805    | Mechanical/Mechanical Engineering Technology/Technician             | 29.0303    | Engineering Acoustics   |
| 15.0806    | Marine Engineering Technology/Technician                            | 29.0306    | Operational Oceanography  |
| 15.0807    | Motorsports Engineering Technology/Technician                       | 29.0307    | Undersea Warfare  |
| 15.0899    | Mechanical Engineering Related Technologies/Technicians, Other      | 29.0409    | Radar Communications and Systems Technology   |
| 15.0901    | Mining Technology/Technician  | 30.1801    | Natural Sciences  |
| 15.1103    | Hydraulics and Fluid Power Technology/Technician                    | 30.3201    | Marine Sciences   |
| 15.1201    | Computer Engineering Technology/Technician                          | 40.1001    | Materials Science   |
| 15.1202    | Computer/Computer Systems Technology/Technician                     | 40.1002    | Materials Chemistry   |
| 15.1203    | Computer Hardware Technology/Technician                             | 40.1099    | Materials Sciences, Other   |
| 15.1204    | Computer Software Technology/Technician                             | 40.9999    | Physical Sciences, Other  |
| 15.1299    | Computer Engineering Technologies/Technicians, Other                | 41.0301    | Chemical Technology/Technician  |
| 15.1301    | Drafting and Design Technology/Technician, General                  | 41.0303    | Chemical Process Technology   |
| 15.1302    | CAD/CADD Drafting and/or Design Technology/Technician               | 47.0101    | Electrical/Electronics Equipment Installation and Repair Technology/Technician, General |
| 15.1305    | Electrical/Electronics Drafting and Electrical/Electronics CAD/CADD | 47.0104    | Computer Installation and Repair Technology/Technician                                  |
| 15.1306    | Mechanical Drafting and Mechanical Drafting CAD/CADD                | 47.0105    | Industrial Electronics Technology/Technician  |
| 15.1307    | 3-D Modeling and Design Technology/Technician                       | 47.0106    | Appliance Installation and Repair Technology/Technician                                 |
| 15.1401    | Nuclear Engineering Technology/Technician                           | 47.0302    | Heavy Equipment Maintenance Technology/Technician                                       |

| <b>CIP</b> | <b>Program</b>  | <b>CIP</b> | <b>Program</b>                                 |
|------------|---|------------|--|
| 47.0303    | Industrial Mechanics and Maintenance Technology/Technician                | 48.0508    | Welding Technology/Welder                      |
| 47.0408    | Watchmaking and Jewelmaking   | 48.0509    | Ironworking/Ironworker                         |
| 47.0499    | Precision Systems Maintenance and Repair Technologies/Technicians, Other  | 48.0511    | Metal Fabricator                               |
| 47.0615    | Engine Machinist  | 48.0599    | Precision Metal Working, Other                 |
| 47.0701    | Energy Systems Installation and Repair Technology/Technician              | 48.0702    | Furniture Design and Manufacturing             |
| 47.0705    | Hydroelectric Energy System Installation and Repair Technology/Technician | 50.0401    | Design and Visual Communications, General      |
| 47.0706    | Geothermal Energy System Installation and Repair Technology/Technician    | 50.0402    | Commercial and Advertising Art                 |
| 48.0501    | Machine Tool Technology/Machinist   | 51.0916    | Radiation Protection/Health Physics Technician |
| 48.0503    | Machine Shop Technology/Assistant   | 51.1006    | Ophthalmic Laboratory Technology/Technician    |
| 48.0506    | Sheet Metal Technology/Sheetworking                                       | 51.2206    | Occupational Health and Industrial Hygiene     |
| 48.0507    | Tool and Die Technology/Technician  | 51.2213    | Patient Safety and Healthcare Quality          |
|            |   | 52.0205    | Operations Management and Supervision          |



### Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

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