












































































The Advanced Manufacturing sector includes traditional manufacturing work in addition to jobs and careers dedicated to customization, scalability and technologies that improve the entire manufacturing process.

**Strong Workforce Program Metrics,  
2015–16 unless otherwise noted**


Central Valley/ Mother Lode	Metric	CA Median
25,562	Course Enrollments (2016–17)	9,089
384	Students Who Got a Degree or Certificate (2016–17)	384
228	Students who Transferred	228
66%	Employed in the 2nd Quarter After Exit	66%
81%	Job Closely Related to Field of Study (2014–15)	74%
\$7,137	Median Earnings in the 2nd Quarter After Exit	\$8,118
65%	Employed in the 4th Quarter After Exit	66%
\$23,674	Median Annual Earnings	\$31,108
46%	Median Change in Annual Earnings	54%
54%	Attained Living Wage	57%

TOP Program	Colleges Offering	Catalog Name	Award Offered	
0924.00 - Engineering Technology, General (requires Trigonometry)	Bakersfield	Engineering Technology		
	Merced	Engineering Technology		
0934.00 – Electronics and Electric Technology	Bakersfield	Electronics Technology		
		Industrial Technology: Electronics		
	Fresno City	Electrical Systems Technology	 	
	Merced	Electronics Technician	 	
		Apprenticeship: Electrical Technology		
		San Joaquin Delta	Electrical Technology	
San Joaquin Delta	Electronics Technology			
	0934.10 – Computer Electronics	Merced	Computer & Networking Technology	 
		Modesto Junior	Computer Electronics	 
0934.20 – Industrial Electronics	Fresno City	Electrical Systems Technology Control Systems		
		Electrical Systems Technology: Automation Control Technician		
	Modesto Junior	Industrial Electronics	 	
0936.00 – Printing and Lithography	Fresno City	Graphic Communications	 	
0943.00 – Instrumentation Technology	Merced	Instrumentation & Process Control Technology	 	
	Modesto Junior	Electro-Mechanic		
0945.00 – Industrial Systems Technology and Maintenance (p.12)	Fresno City	Manufacturing Mechanic		
	Merced	Industrial Maintenance Technology	 	
		Apprenticeship: Industrial Technology-Electrical		
		Apprenticeship: Industrial Technology-Maintenance		
		Apprenticeship: Industrial Technology-Mechanical		
		Apprenticeship: Industrial Technology-Operations		
		Fluid Power & Automation Technology	 	
	San Joaquin Delta	Industrial Technology		
Sequoias	Industrial Maintenance Technology	 		
0950.00 – Aeronautical and Aviation Technology	Reedley	Aviation Maintenance Technology	 	

# ADVANCED MANUFACTURING

TOP Program	Colleges Offering	Catalog Name	Award Offered
0953.40 – Mechanical Drafting	Merced	CAD Drafting – Mechanical Design	 
		CAD Draftsman – Mechanical	 
		CAD Operator	
	San Joaquin Delta	Engineering Technology	 
	Sequoias	Autodesk AutoCAD for Drafting	
		Dassault Systemes SolidWorks	
0956.00 – Manufacturing and Industrial Technology (p.14)	Bakersfield	Industrial Tech: Manufacturing Technology	
		Industrial Technology (General)	
		Manufacturing Technology	
	Cerro Coso	Industrial Technology	 
	Fresno City	Computer Aided Manufacturing	 
		Industrial Technology: Manufacturing	
		Maintenance Mechanic	
	Modesto Junior	Manufacturing Technology (Interdisciplinary)	
	Porterville	Industrial Maintenance	
		Power Technician Utility Worker	
	Reedley	Manufacturing 1	
		Manufacturing Maintenance Mechanic	 
0956.30 – Machining and Machine Tools (p.16)	Bakersfield	Basic Machine Tool Operations – Lathe, Mill	
	Cerro Coso	Machine Tool Technology	
	Modesto Junior	Machine Tool Technology	 
		Maintenance Machinist	
	Reedley	Machine Tool Technology	
		Machinist	
	San Joaquin Delta	Computer Numerical Control (CNC) Operator/Programmer	
		Machining Technology	
		Machinist Entry-Level	
	Sequoias	Machining and Manufacturing	



TOP Program	Colleges Offering	Catalog Name	Award Offered
0956.50 – Welding Technology	Bakersfield	Industrial Technology: Welding	
		Welding	
	Cerro Coso	Welding Processes	
		Welding Technology	 
	Columbia	Welding Technology	
	Fresno City	Welding Design & Fabrication	
		Welding Multi-Process	
		Welding Technology: Metal Fabrication	 
		Welding Technology: Pipe & Structural Steel Certification	 
	Merced	Advanced Welding and Metal Fabrication	
		Welding Technology	
	Modesto Junior	Welding	
	Reedley	Welder	
		Welding Technology	
	San Joaquin Delta	Gas Metal Arc Welding (GMAW)/Flux Core Arc Welding (FCAW)	
		Gas Tungsten Arc Welding (GTAW)	
		Oxy-Fuel Processes and Shielded Metal Arc Welding (SMAW)	
		Welding Technology	
	Sequoias	Welding	
		Welding Technology	
	Taft	Pipe Code Welding	
		Structural Code Welding	
		Welding Technology	
West Hills Coalinga	Welding Technology		

# ADVANCED MANUFACTURING

TOP Program	Colleges Offering	Catalog Name	Award Offered
0956.70 – Industrial and Occupational Safety and Health	Bakersfield	Occupational Safety and Risk Management, Agriculture	
		Occupational Safety and Risk Management, Business	
		Occupational Safety and Risk Management, Health Science	
		Occupational Safety and Risk Management, Industrial Technology	
	Taft	Industrial Health & Safety Midlevel Certificate	
		Industrial Health and Safety	
		Industrial Health and Safety Foundation	
1303.30 – Fashion Production	San Joaquin Delta	Apparel Industry Sewing	



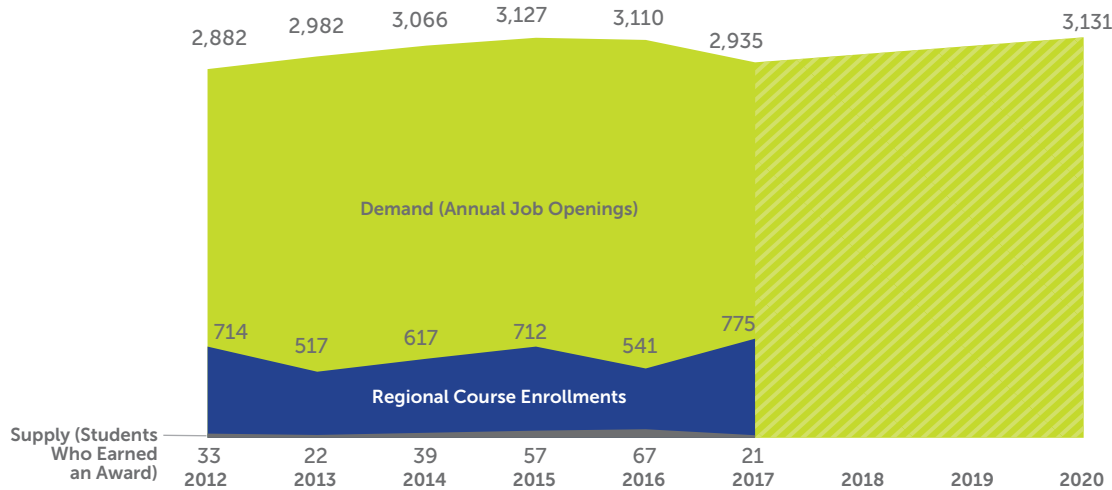




**Relevant Occupations:**

	Maintenance and Repair Workers, General	First-Line Supervisors of Production and Operating Workers	Industrial Machinery Mechanics	Electrical and Electronics Repairers, Commercial and Industrial Equipment	Mechanical Engineering Technicians
2017–20 Average Annual Job Openings	1,777	663	626	51	14

**Supply/Demand for Selected Occupations, 2012–20:**



**Strong Workforce Program Metrics, 2015–16:**

Region	vs	California
72%	Employed in the 2nd Quarter After Exit	73%
80%	Job Closely Related to Field of Study (2014–15)	77%
\$8,407	Median Earnings in the 2nd Quarter After Exit	\$9,838
71%	Employed in the 4th Quarter After Exit	73%
\$24,803	Median Annual Earnings	\$31,903
79%	Median Change in Annual Earnings	63%
59%	Attained Living Wage	61%

**Regional Colleges Offering Programs:**

Programs Offered					Associate Program Certificate Program Noncredit award
2016–17 Awards	9	1 1	- 2	3 7	
2016–17 Course Enrollments	200	16	156	300	

**Regional Colleges Offering Courses:**

	Modesto	59	2016–17 Enrollments
	West Hills Coalinga	44	2016–17 Enrollments

# Industrial Systems Technology and Maintenance – 0945.00

Design, construction, maintenance, and operation of mechanical, hydraulic, pneumatic, and electrical equipment and related systems, such as production machinery. Includes building and plant maintenance.

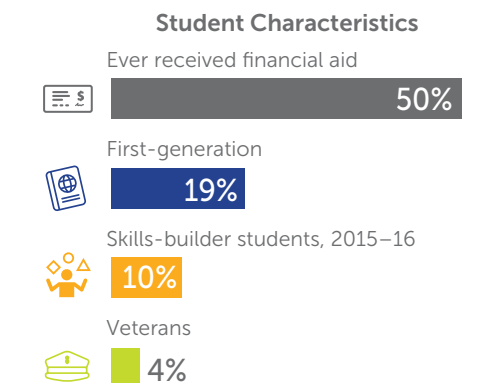
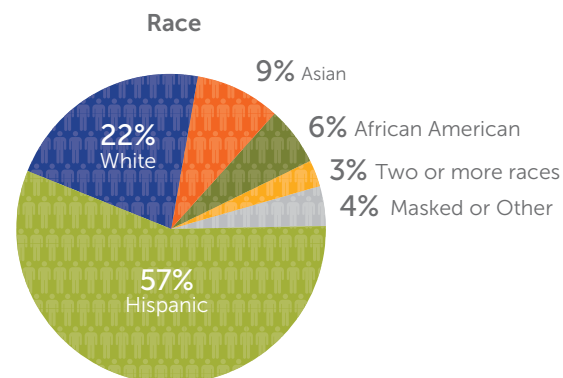
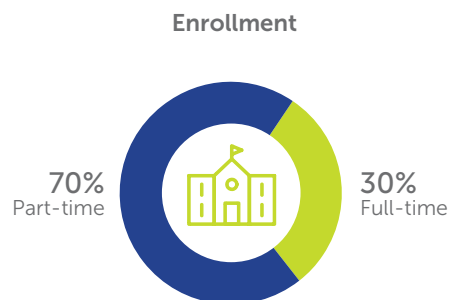
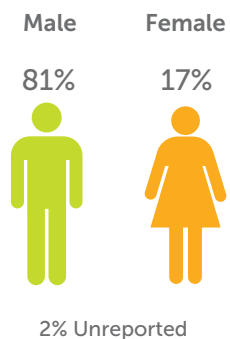
## Occupation Data:

Occupation	3-Year 2017–20 Total Openings	Wage Range* (Entry, Median, Experienced Wage)	Typical Entry Level Education & Training Required	Sample of In-Demand Skills From Job Postings (2017)	% of Current Workers Age 55+
Maintenance and Repair Workers, General	5,331	\$10.98 \$18.59 \$29.59	High school diploma or equivalent & 1 to 12 months training	Plumbing, HVAC, Painting, Carpentry	30%
First-Line Supervisors of Production and Operating Workers	1,990	\$14.58 \$25.38 \$45.99	High school diploma or equivalent & none	Scheduling, Budgeting, Process Improvement	25%
Industrial Machinery Mechanics	1,879	\$16.02 \$24.94 \$35.51	High school diploma or equivalent & more than 12 months training	Repair, Predictive/Preventative Maintenance, Welding	28%
Electrical and Electronics Repairers, Commercial and Industrial Equipment	152	\$17.37 \$26.70 \$36.95	Postsecondary nondegree award & more than 12 months training	Hardware Experience, Project Management, Repair*	17%
Mechanical Engineering Technicians	41	\$18.92 \$28.72 \$38.82	Associate degree & none	Repair, Quality Assurance and Control, Wiring	~21%

\*Entry hourly earnings is 10th percentile wage, experienced hourly earnings is 90th percentile wage.

\*Due to low regional demand, these skills are based on statewide job postings.

## Student Demographics, 2016–17 (396 Total Students):



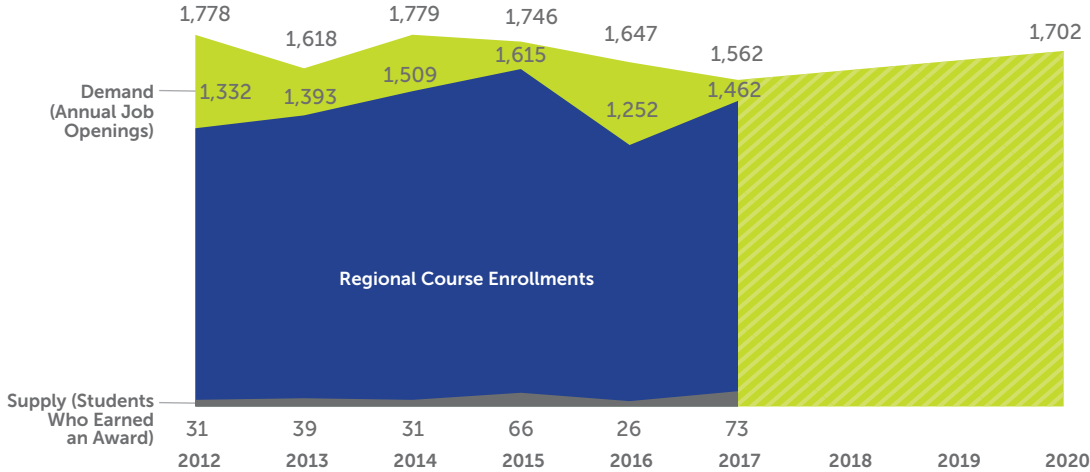




## Relevant Occupations:

2017-20 Average Annual Job Openings	Inspectors, Testers, Sorters, Samplers, and Weighers	Industrial Machinery Mechanics	Machinists	Computer-Controlled Machine Tool Operators, Metal and Plastic	Electrical and Electronics Repairers, Commercial and Industrial Equipment	Industrial Engineering Technicians	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic
663	626	268	60	51	18	16	

## Supply/Demand for Selected Occupations, 2012-20:



## Strong Workforce Program Metrics, 2015-16:

Region	vs	California
79%	Employed in the 2nd Quarter After Exit	78%
64%	Job Closely Related to Field of Study (2014-15)	66%
\$8,829	Median Earnings in the 2nd Quarter After Exit	\$9,357
79%	Employed in the 4th Quarter After Exit	76%
\$35,235	Median Annual Earnings	\$35,562
77%	Median Change in Annual Earnings	77%
68%	Attained Living Wage	62%

## Regional Colleges Offering Programs:

	Bakersfield	Cerro Coso	Fresno City	Modesto Junior	Porterville	Reedley
Programs Offered						
2016-17 Awards	3 1*	- -	1 1 17	9	45*	- -
2016-17 Course Enrollments	183	23	169	23	76	425
2015-16 Transfers	-	-	<10	<10	-	<10

## Regional Colleges Offering Courses:

Merced	83 0	2016-17 Enrollments 2015-16 Transfers
San Joaquin Delta	365 <10	2016-17 Enrollments 2015-16 Transfers
Taft	28 0	2016-17 Enrollments 2015-16 Transfers
West Hills Lemoore	87 0	2016-17 Enrollments 2015-16 Transfers

# Manufacturing and Industrial Technology – 0956.00

Engineering principles and technical skills for the manufacture of products and related industrial processes. Includes Computer Aided Manufacturing and robotics.

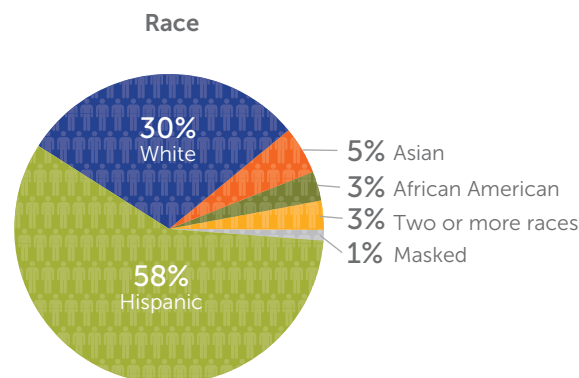
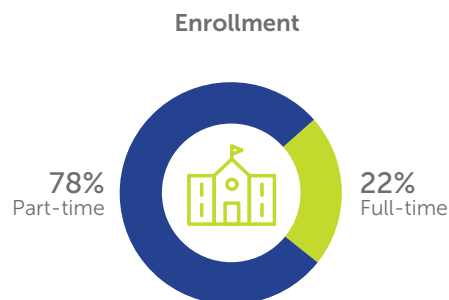
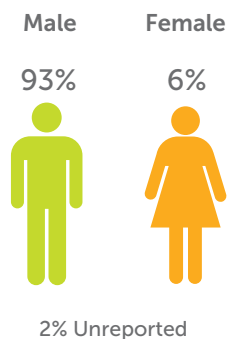
## Occupation Data:

Occupation	3-Year 2017–20 Total Openings	Wage Range* (Entry, Median, Experienced Wage)		Typical Entry Level Education & Training Required	Sample of In Demand Skills From Job Postings (2017)	% of Current Workers Age 55+
Inspectors, Testers, Sorters, Samplers, and Weighers	1,989	\$10.22	\$16.30 \$30.21	High school diploma or equivalent & 1 to 12 months training	Quality Assurance and Control, Scheduling, Data Entry	26%
Industrial Machinery Mechanics	1,879	\$16.02	\$24.94 \$35.51	High school diploma or equivalent & more than 12 months training	Repair, Predictive/Preventative Maintenance, Welding	28%
Machinists	805	\$11.76	\$19.15 \$30.66	High school diploma or equivalent & more than 12 months training	Computer Numerical Control (CNC), Lathes, Micrometers	28%
Computer-Controlled Machine Tool Operators, Metal and Plastic	179	\$11.58	\$17.19 \$28.55	High school diploma or equivalent & 1 to 12 months training	Computer Numerical Control (CNC), Lathes, Grinders	19%
Electrical and Electronics Repairers, Commercial and Industrial Equipment	152	\$17.37	\$26.70 \$36.95	Postsecondary nondegree award & more than 12 months training	Hardware Experience, Project Management, Repair*	17%
Industrial Engineering Technicians	55	\$19.52	\$34.79 \$49.80	Associate degree & none	Repair, Predictive/Preventative Maintenance, Welding	~22%
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	47	\$15.77	\$24.68 \$35.11	Postsecondary nondegree award & 1 to 12 months training	Lathes, Calipers, Micrometers	~16%

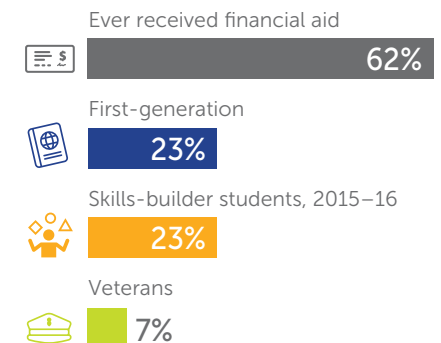
\*Entry hourly earnings is 10th percentile wage, experienced hourly earnings is 90th percentile wage.

\*Due to low regional demand, these skills are based on statewide job postings.

## Student Demographics, 2016–17 (741 Total Students):



### Student Characteristics





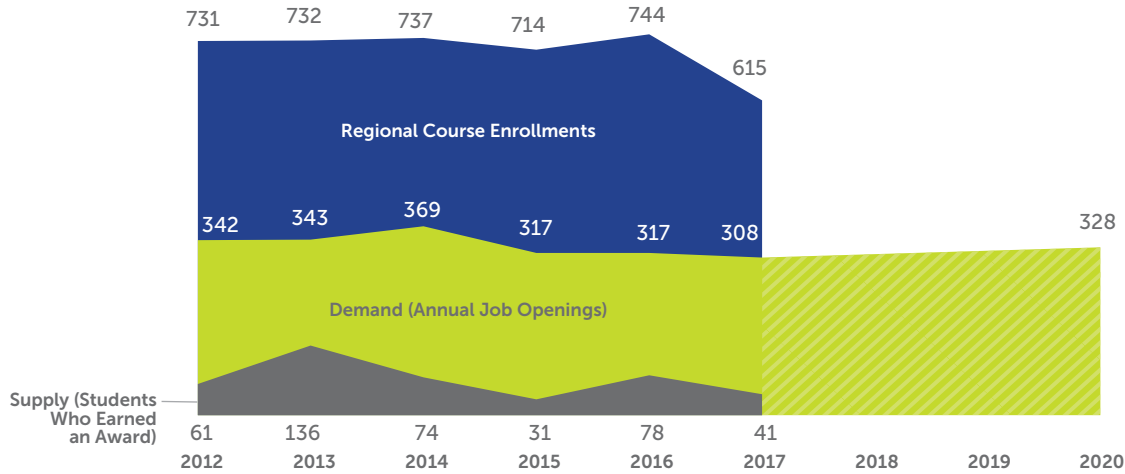
## Relevant Occupations:

2017–20  
Average Annual  
Job Openings

  
Machinists  
**268**

  
Computer-Controlled Machine Tool  
Operators, Metal and Plastic  
**60**










## Supply/Demand for Selected Occupations, 2012–20:



## Strong Workforce Program Metrics, 2015–16:

Region	vs	California
<b>78%</b>	Employed in the 2nd Quarter After Exit	<b>75%</b>
<b>90%</b>	Job Closely Related to Field of Study (2014–15)	<b>78%</b>
<b>\$6,999</b>	Median Earnings in the 2nd Quarter After Exit	<b>\$9,732</b>
<b>76%</b>	Employed in the 4th Quarter After Exit	<b>76%</b>
<b>\$25,610</b>	Median Annual Earnings	<b>\$38,568</b>
<b>54%</b>	Median Change in Annual Earnings	<b>52%</b>
<b>71%</b>	Attained Living Wage	<b>67%</b>

## Regional Colleges Offering Programs:

	 Bakersfield	 Cerro Coso	 Modesto Junior	 Reedley	 San Joaquin Delta	 Sequoias
Programs Offered			 	 	 	
2016–17 Awards	<b>15</b>	-	<b>5</b> <b>19</b>	- <b>9</b>	<b>1</b> <b>7</b>	-
2016–17 Course Enrollments	<b>131</b>	<b>28</b>	<b>176</b>	<b>110</b>	<b>115</b>	-

## Regional Colleges Offering Courses:



 Fresno City **55** 2016–17 Enrollments

 Associate Program  
 Certificate Program

# Machining and Machine Tools – 0956.30

Fabrication, assembly and repair of parts and components or systems on machines, such as lathes, grinders, drill presses, milling machines, and shaping machines. Includes Computer Numerical Control and tool design.

## Occupation Data:

Occupation	3-Year 2017–20 Total Openings	Wage Range* (Entry, Median, Experienced Wage)	Typical Entry Level Education & Training Required	Sample of In Demand Skills From Job Postings (2017)	% of Current Workers Age 55+
Machinists	805	\$11.76  \$30.66 \$19.15	High school diploma or equivalent & more than 12 months training	Computer Numerical Control (CNC), Lathes, Micrometers	28%
Computer-Controlled Machine Tool Operators, Metal and Plastic	179	\$11.58  \$28.55 \$17.19	High school diploma or equivalent & 1 to 12 months training	Computer Numerical Control (CNC), Lathes, Grinders	19%

\*Entry hourly earnings is 10th percentile wage, experienced hourly earnings is 90th percentile wage.

## Student Demographics, 2016–17 (487 Total Students):

