

MSP Sector Analysis Manufacturing Focus on Skill Levels

Develop & Retain Technical Talent, Grow Engineer Pipeline
Stronger career pathways are needed in manufacturing in Minneapolis-Saint Paul to maintain the sector's recent growth. Employment in manufacturing roles dropped to 194,953 in Q4 2017, while sector unemployment dropped from 4.2% to 3% in Q4, due in large part to a tight labor market and record manufacturing vacancies in Q2 and Q3 of 2017--many of which went unfilled. With at least 63,200 manufacturing positions to be filled by 2020 (around 32,200 of these in the industry), employers should focus on development and retention of talent into high-need occupations that lead to career growth in process, technical, or engineering pathways.

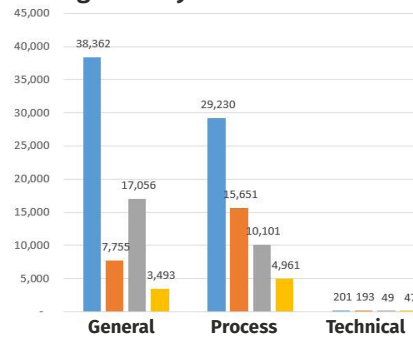
Top Occupations in Demand in the 7-County Metro

Entry

Good entry points with short-medium training, do not require mechanical aptitude or experience

Top Occupations by Training Need in the Manufacturing Industry*

- Team Assemblers
- Helpers--Production Workers
- Laborers & Freight, Stock, & Materials Movers
- Packaging and Filling Machine Operators & Tenders
- Packers & Packers, Hand

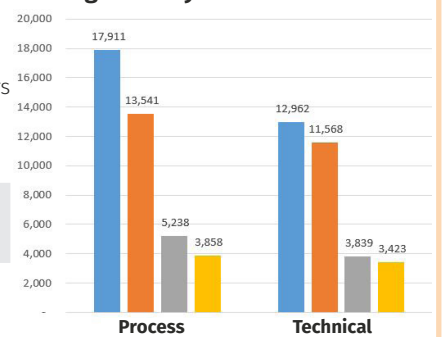


Accessible

Good entry points with short-medium training, do not require mechanical aptitude or experience

Top Occupations by Training Need in the Manufacturing Industry

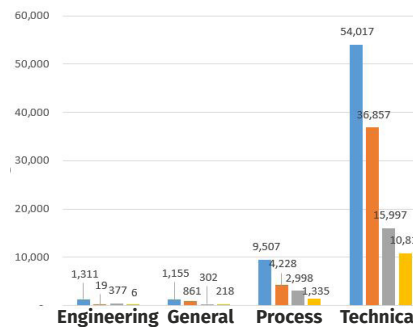
- Electrical & Electronic Equipment Assemblers
- Inspectors, Testers, Sorters, Samplers, & Weighers
- Metal & Plastic Cutting & Punching Machine Setters
- Computer-Controlled Machine Operators
- Coating & Painting Machine Setters & Operators



Skilled Mechanical aptitude required, may be accessible through pathways but more likely community colleges or HS tech programs

Top Occupations by Training Need in the Manufacturing Industry

- Machinists
- Supervisors of Production & Operating Workers
- Welders, Cutters, Solderers, & Brazers
- Printing Press Operators
- Print Binding & Finishing Workers



Advanced

Engineering and other advanced education positions, 4+ year degree required

Top Occupations by Training Need in the Manufacturing Industry

- Industrial Engineers - **HIGH SHORTAGE EXPECTED**
- Mechanical Engineers
- Industrial Production Managers
- Industrial Engineering Technicians
- Electrical Engineers - **HIGH SHORTAGE EXPECTED**

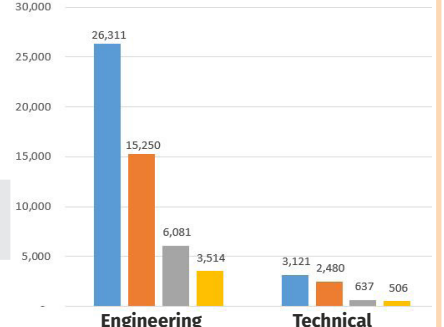


Chart Key

- Total Employment
- Employment in Manufacturing
- Total New Demand by 2020
- Manufacturing New Demand by 2020

Industry Detail

	Current			3-Year History			3-Year Forecast (Baseline)			3-Year High Growth Scenario*		
	Employment	Avg. Annual Wages	Location Quotient	Total 3-Year Employment Change	7-County Metro	Exits (incl. retirements)	Transfers (occupation changes)	Est. Training Need 2020	Est. Employment Change 2020	Est. Avg. Annual Growth	Est. Employment Change 2020	Est. Avg. Annual Growth
Food & Product Manufacturing	60,465	\$64,744	0.96	2,081	1.2%	7,509	12,201	18,149	-1,519	-0.8%	696	0.4%
Fabrication Manufacturing	42,017	\$70,432	1.40	329	0.3%	4,452	8,267	12,101	-607	-0.5%	950	0.7%
Assembly Manufacturing	41,454	\$100,929	1.12	68	0.1%	3,996	7,109	9,812	-1,289	-1.0%	238	0.2%
Medical Device Manufacturing / Med Tech	17,595	\$89,699	2.45	1,196	2.4%	1,976	3,351	5,438	111	0.2%	785	1.5%
Furniture, Clothing, Jewelry, & Other	11,142	\$55,255	0.81	442	1.4%	1,401	2,078	3,272	-200	-0.6%	194	0.6%
All Manufacturing Industry	172,674	\$76,815	1.14	4,115	0.8%	19,334	33,006	48,772	-3,481	-0.7%	2,888	0.6%
Total - All Industries	1,833,479	\$62,255	1.00	90,515	1.7%	259,737	346,286	645,117	39,093	0.7%	101,092	1.8%

*If Economic and Employment Growth Could Continue, without Labor Force Shortage (estimate of true employer demand)

*Training need refers to the number of individuals that will be needed to fill positions vacated by people leaving the workforce or changing careers over the next three years (job separations and replacement need).



Educational Awards in Manufacturing by School - in 2016

Schools	Certificate	AA	BA	Post-graduate	Grand Total	Share of Graduates
Anoka Technical College	56	65			121	4%
Anoka-Ramsey Community College	9	5			14	0.5%
Augsburg College			12		12	0.4%
Bethel University			9		9	0.3%
Century College	44	45			89	3%
Concordia University-Saint Paul			1	8	9	0.3%
Dakota County Technical College	149	39			188	6%
Dunwoody College of Technology	51	109	19		179	6%
Globe University-Woodbury**		14	4		18	1%
Hamline University			13		13	0.4%
Hennepin Technical College	275	150			425	14%
Inver Hills Community College		2			2	0.1%
Macalester College			20		20	1%
Metropolitan State University			12		12	0.4%
Minneapolis Community & Technical College	39	28			67	2%
National American University			2		2	0.1%
Normandale Community College	10	11			21	1%
North Hennepin Community College	22	2			24	1%
Saint Paul College	105	23			128	4%
St Catherine University			9		9	0.3%
University of Minnesota-Twin Cities			904	431	1,335	45%
University of St Thomas			152	91	243	8%
Total Awards	760	493	1,157	530	2,940	
Share of Awards	26%	17%	39%	18%		

Training Program Graduates

Entry-Level Credential Programs	Est. Annual Graduates
Pathways to Prosperity Program	43
Dislocated Worker Program	30
<i>Less than 16% of graduates from either program secured employment in manufacturing</i>	

National Institute for Metal-working Skills (NIMS, MN)

Courses	2016	2017
Tests Taken	622	414
Credentials/Passed	477 (77%)	334 (81%)

Educational Awards by Program

2-Digit CIP	Degrees Related to Manufacturing	Certificate & AA	BA	Post-graduate	Total
1	Food Science	40	39	18	97
14	Engineering	0	758	383	1,141
15	Technology	541	4	19	564
19	Apparel & Textile Manufacturing	23	0	0	23
40	General Chemistry	12	249	78	339
41	Nuclear/Chemical Technology	5	0	0	5
46	Lineworker	60	0	0	60
47	Maintenance Technology	39	0	0	39
48	CNC/Machining/Welding Technology	463	3	0	466
51	Orthotist/Prosthetist	44	0	8	52
52	Chain Management/Supervision	26	121	0	147
Share by Award Level		43%	39%	18%	

Occupations (sorted by greatest training need)	Est. Annual Supply Gap (or Surplus)	Training Concentration	Additional Adults to be Trained	% College Educated Nationwide
• Industrial Engineering Technicians	(6)	16% (very low)	286	50-75%
• Welders, Cutters, Solderers & Brazers	(18)	56% (low)	164	25-50%
• Industrial Engineers*	99	50% (low)	106	75%+
• Electrical Engineers*	48	70% (mod.)	92	75%+
• Machinists	(36)	1% (very low)	62	25-50%
• Electrical & Electronic Engineering Techs	(9)	31% (very low)	56	50-75%

For more information:

- Industry Contact: **Mike Slezak, DEED** (michael.slezak@state.mn.us)
- MSPWin Career Map: <http://mspwin.org/wp-content/uploads/2016/06/Career-Pathway-Maps.pdf>
- RealTime Talent Reports: realtimetalent.org/research/reports

*Indicates expected worker gap. Other occupations will have under-skilled workers. **Globe University closed in 2017. Programs listed are explicitly tied to finance and awarded more than 10 degrees or certificates in 2016. Developed by Erin Olson (erin@realtimetalentmn.org). Published 5/30/2018 by RealTime Talent. Sources: TalentNeuron Recruit aggregate online job postings. www.wantedanalytics.com accessed January 15, 2018. Counts of job postings in Q3 2017 by employer were available Oct 31 - December 31, 2017 in the 7-county Minneapolis-Saint Paul Metro. Includes staffing agencies. Employment, wage, and education data modeled from IPEDS, OES, and BLS data by JobsEQ. 2016 completions include awards issued and are not counts of graduates. Living wage was defined for the purposes of these reports as any occupation where the median wage is \$30,000 annually, or about \$14.50 per hour.