





























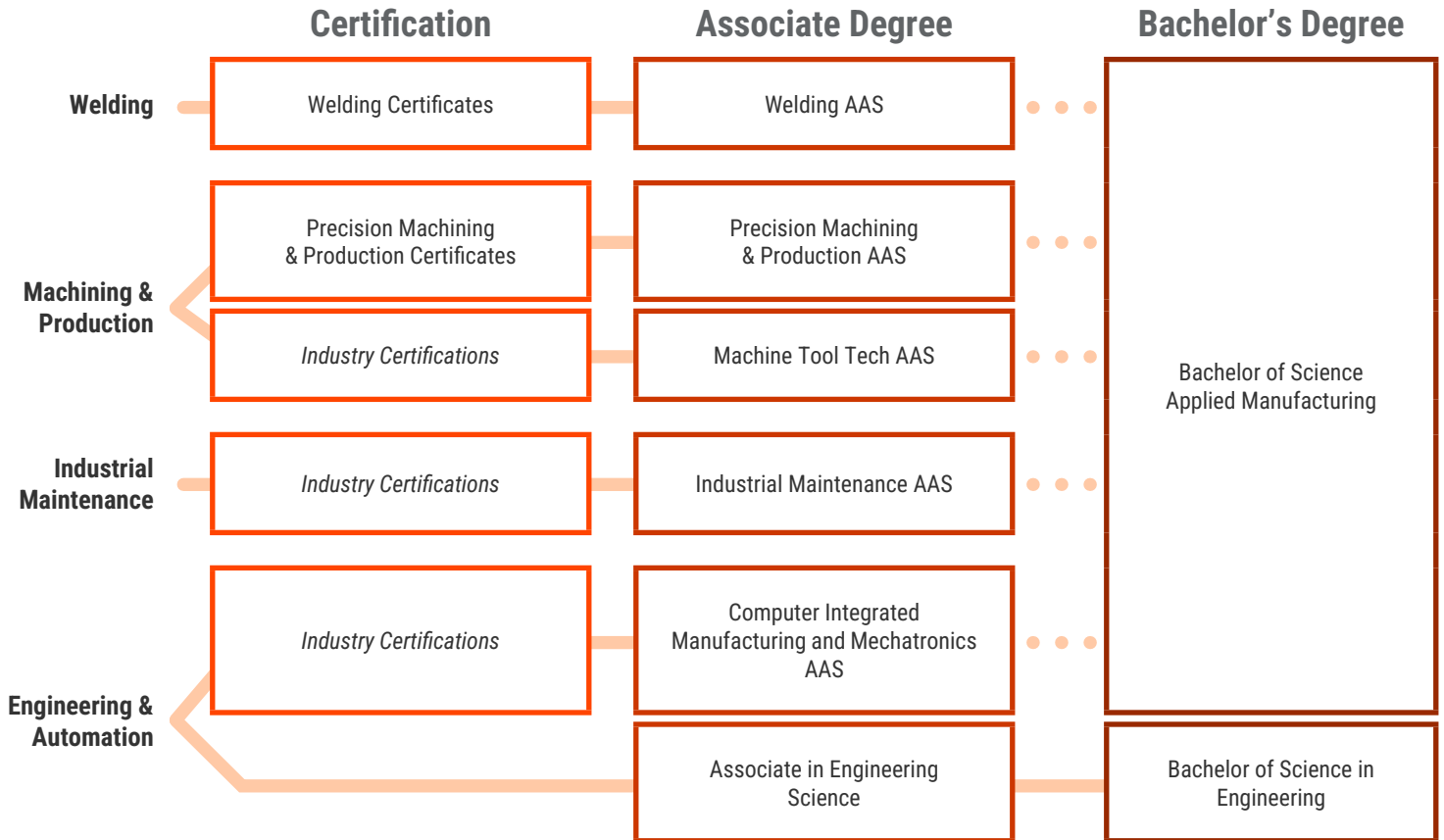
Model Programs of Study in Manufacturing and Engineering

Recommended Courses

	GRADES 9–10 Orientation	GRADES 10–12 Skill Development	GRADE 12 Capstone	 1ST YEAR* Postsecondary
Advanced Manufacturing	Introduction to Technology and Engineering	Foundations of Production and Manufacturing Processes  	Advanced Production and Manufacturing Processes   Basic Welding  	Manufacturing Materials and Processes CNC Programming 
Engineering		Principles of Engineering  Additional Engineering Courses 	Computer Integrated Manufacturing  Additional Engineering Courses 	Advanced CAD/CAM Technology Industrial Electricity
Work-Based Learning	Career Exploration (2)	Choose 1: Career Development Experience or Youth Apprenticeship		
	Team-Based Challenge (2); may be offered through <i>Career and Technical Student Organizations</i> including a FFA Career Development Event			
Math	Math sequence: highest-level course possible	Math sequence: highest-level course possible	Choose 1: • College Algebra  • Calculus  • Pre-Calculus • Transitional Math: STEM • Transitional Math: Technical Math	Choose 1: • Technical Math • College Algebra* • Trigonometry • Calculus* 
English	English sequence	English sequence	Choose 1: • Transitional English • English Composition 	Choose 1: • English Composition*  • Oral Communication 
Science	Science sequence	Science sequence	Physics 	General Physics  General Chemistry 
Social Science	Social science sequence	Social science sequence	Social science sequence 	Social science sequence 

KEY:  AP or dual credit course  Dual credit course  College & Career Pathway Endorsement
 Dual credit course with IAI  Postsecondary course with IAI
 * If credit was already earned through an early college course, take the next requirement in the sequence or, if none, additional AAS or major courses

Postsecondary Opportunities



● ● ● Bachelor's degree is not required for employability

Selected Occupations, Wages, and Job Growth

Program	Typical Job(s)	Living Wage Potential*	Median Annual Wage**	IL Growth: Change over 10 years ***	IL Annual Job Openings***	Typical Educational Requirements
Welding	Welders, Cutters, Solderers, and Brazers	Medium	\$23.37	10.3%	1,765	High School Diploma
Machining and Production	Tool and Die Makers	Medium	\$29.78	2.4%	456	Postsecondary Certificate
	Machinists	Medium	\$24.13	9.1%	3,280	High School Diploma, Some College
	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	Medium	\$22.05	9.7%	1,325	
	Computer Numerically Controlled Tool Programmers	Medium	\$30.22	29.1%	175	
Industrial Maintenance	Industrial Machinery Mechanics	Medium	\$29.96	27.2%	1,680	High School Diploma, Some College
Engineering and Automation	Electrical and Electronic Engineering Technologists and Technicians	Medium	\$32.96	1.2%	280	Associate Degree
	Industrial Engineering Technologists and Technicians	Medium	\$30.85	7.0%	195	
	Mechanical Engineering Technologists and Technicians	Medium	\$33.46	7.0%	166	
	Mechanical Engineers	High	\$47.34	8.7%	872	Bachelor's Degree
	Industrial Engineers	High	\$48.88	15.6%	1,028	

* Living wage potential is based on MIT's Living Calculator (livingwage.mit.edu) for Illinois in 2024. Occupations with median salaries higher than the living wage for 1 adult + 1 child (\$39.63/hour) are considered as having a "high" living wage potential. Occupations with median salaries only higher than the living wage of 1 adult, no children (\$22.86/hour) are considered as having a "medium" living wage potential, and occupations with median salaries below the living wage of 1 adult, no children (less than \$22.86/hour) are considered as having a "low" living wage potential.

** Illinois Department of Employment Security (2022). Wage Information: Occupational Employment and Wage Statistics (Statewide). Retrieved April 2, 2024, from ides.illinois.gov/resources/labor-market-information/oews.html

*** Illinois Department of Employment Security. Employment Projections (Long-Term Occupational Projections 2020-2030). Retrieved April 2, 2024, from ides.illinois.gov/resources/labor-market-information/employment-projections.html