



Regional College-Career Pathway:

Manufacturing and Engineering



ORIENTATION / INTRODUCTION Grades 9-10

SKILL DEVELOPMENT Grades 10-12

CAPSTONE / ADVANCED Grades 12

PLTW Introduction to Engineering Design
or CAD 101 Introduction to Engineering Design

IMT 103 Industrial Manufacturing Tech I
& WEL 101 Welding I

WEL 102 Welding II
&/or Work Experience

PLTW Introduction to Engineering Design
or CAD 101/EGR 101 Engineering Design Graphics/CAD

IMT 103 Industrial Manufacturing Tech I
& IMT 104 Industrial Manufacturing Tech II

IMT 110 Intro to Computer Integrated Manufacturing
& CAD 120 Intro to Solidworks

PLTW Introduction to Engineering Design
or CAD 101 Introduction to Engineering Design

IMT 103 Industrial Manufacturing Tech I
& IMT 104 Industrial Manufacturing Tech II

IMT 110 Intro to Computer Integrated Manufacturing
& IMT 108 Industrial Manufacturing III
or Work Experience



Courses and Work-Based Learning Address the PWR Act Recommended Technical and Essential Employability Competencies

CAREER FOCUSED COURSES

- Welding
- Engineering Focus
- Computer Integrated Manufacturing

WORK-BASED LEARNING

SCIENCE

SOCIAL SCIENCE

MATH

Welding & CIM

Engineering Focus

ENGLISH

Career Exploration

Team-Based Challenge: Incubator

Team-Based Challenge

Career Development Experience

Science Sequence

Science Sequence

AP Biology

or

BIO 108 Biology for Contemporary Society

Social Science Sequence

Social Science Sequence

Social Science Sequence

Algebra or Geometry

Geometry or Algebra 2 or Precalculus

Transition to College: Algebra

Math Sequence

Math Sequence

AP Calculus

or

MTH 112 College Algebra

English Sequence

English Sequence

AP Language & Composition

or

ENG 101 English Composition I
& ENG 102 English Composition II

AP or Dual Credit

Dual Credit Course

College and Career Pathway Endorsement Earned



POSTSECONDARY OPTIONS

1 WELDING

WEL 222 Blueprint Reading & Fabrication
WEL 102 Welding II
WEL 208 Welding III

Welding Fabrication Technology AAS

Additional Advanced Certificates

2 INDUSTRIAL MANUFACTURING

IMT 220 Introduction to CNC Programming
IST 120 Hydraulics
CAD 121 Advanced Concepts and Solidworks

Industrial Manufacturing Technology AAS

IST 105 Electrical Control Circuits
IST 110 Electrical Motor Control
IST 120 Hydraulics

Industrial Maintenance Technology AAS

Bachelor's of Science Applied Manufacturing

3 COMPUTER INTEGRATED MANUFACTURING

IMT 220 Introduction to CNC Programming
IST 120 Hydraulics
CAD 121 Advanced Concepts and Solidworks

Computer Integrated Manufacturing AAS



SELECTED OCCUPATIONS, WAGES, & JOB GROWTH

Program	Typical Job	Near or Above Living Wage Threshold for 1 Adult + 1 Child ¹	Median Hourly Wage ²	Growth in IL: Annual Job Openings ²	Growth in IL: % Change Over 10 years ²	Stackable?
1 Welding	Welders, Cutters, Welder Fitters	N	\$19.28	1,540	5%	Not Typically Stackable
2 Industrial Maintenance	Industrial Machinery Mechanics	Y	\$26.41	1,240	10%	Typically Stacks to Related Bachelor's Program at Select IL Universities
	Process Technology	Chemical Equipment Operators and Tenders, Biofuels Processing Technician	Y	\$24.95 - \$33.87	200	
3 Computer Integrated Manufacturing & Mechatronics	Manufacturing Engineering Technologists, Electromechanical Engineering Technologists, Robotics Technicians	Y	\$30.26 - \$30.48	460	5%	
	Guided Transfer: Engineering	Engineers in Various Branches: Mechanical, Civil, Electrical, Chemical, Mechatronics, Industrial	Y	\$40.65 - \$44.51	3,760	4% - 12%

1. Living wage calculations are based on MIT's Living Calculator (livingwage.mit.edu), where the "Living Wage" for 1 Adult + 1 Child is \$26.27/hour for the state of Illinois. "Near" defined as 85% of the statewide living wage, which is \$22.33/hour

2. U.S. Department of Labor, CareerOnestop (careeronestop.org/explorecareers)

