Applied Manufacturing Technology Pathway Model

Applied Manufacturing Technology includes the planning, management, and processing of materials into intermediate or final products as well as professional and technical support activities such as production planning and control, maintenance and manufacturing process engineering. Demand for skilled employees is growing rapidly in this field.

Manufacturing Technology Occupations in Highest Demand

- Chemical engineer
- Electrical engineer
- Electronics engineer
- Health, safety, environmental assurance
- Industrial engineer
- Labor relations manager
- Logistician
- Maintenance and repair workers
- Manufacturing engineer
- Materials engineer
- Mechanical engineer
- Operations manager
- Quality control technician
- Production manager
- Team assembler

Potential Careers in Manufacturing Engineering Technology

- Product design
- 3-D CAD modeling
- Process planning
- Production scheduling
- Quality technician
- CNC programming and operation
- Automated production
- Technical sales

Graduates with a Bachelor of Science, Applied Manufacturing Technology (NIU), find careers at companies like

- AON
- Caterpillar
- Chrysler
- Conner-Winfield
- Hamilton Sundstrand (UTC Aerospace Systems)
- Ideal Industries
- Ingersoll
- Motorola
- Siemens
- Underwriters Labs
- Woodward

2015 median pay for an industrial engineer technician is $53,780

Integrated Work-Based Learning Components

See back panel for more specific program requirements >>

Career Awareness Activities
Workplace Tours, Guest Speakers or Career Fairs

Career Exploration Activities
Job Shadowing, Site Visits, or Informational Interviews

Career Practice Activities
Student Camps and Challenges, Student Enterprises or Service Learning

Professional Learning
Internships and Industry Credentials

Did you know...

Analysts project **1,000,000 manufacturing vacancies** by the year 2020.

Source: The 2014 Boeing Pilot & Technician Outlook

The average US Manufacturing worker earns more than $77,000…almost 25% more than other sectors.

Source: National Association of Manufacturers

The fastest-growing jobs in the Rockford area are in the manufacturing of transportation equipment, electrical equipment, appliances, and components.

Source: Regional P-20 Network Emerging Jobs Report

All required 300-400 courses in NIU's Applied Manufacturing Technology program are offered online.

Manufacturing is responsible for 9% of the employment, 60% of exports and 69% of private funding for research and development.

Source: treasury.gov

Manufacturing productivity has grown 15% in the United States since 2009.

Source: treasury.gov

For every $1.00 spent in manufacturing, another $1.37 is added to the economy.

Source: mfgtalkradio.com

NORTHERN ILLINOIS REGIONAL P-20 Network

Recommended Applied Manufacturing Technology Pathway

4 Semesters Rockford Public Schools (RPS) – Engineering, Manufacturing, Industrial and Trades Technology Academy (EMITT) Manufacturing Operations Pathway				**6 Semesters Rock Valley College** Associates Degree – Manufacturing Engineering Technology						**2 Semesters Northern Illinois University** Bachelor of Science in Technology, Applied Manufacturing Technology (online)	
EMITT Academy Manufacturing Operations Pathway				**RVC - Manufacturing Engineering Technology**						**NIU - Bachelor of Science, Applied Manufacturing Technology**	
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 1**		**Year 2**		**Year 2**		**Year 1**	
Grade 9	**Grade 10**	**Grade 11**	**Grade 12**	**Semester 1**	**Semester 2**	**Semester 3**	**Semester 4**	**Semester 5***	**Semester 6***	**Semester 1**	**Semester 2**
Tech	Intro to Industrial Technology and Engineering	Introduction to Engineering Design	Machine Tool I	Algebra (MTH 096S 6 credits)	Manufacturing Processes I (MET-110)	CNC Machine Setup/ Operations/ Programming (MET-111)	Hydraulics, Pneumatics and PLCs (MET-146)	DC/AC Circuits and Electronics I (EET-141)	Robotics and Automated Systems (EET-254)	Industrial Quality Control (TECH 391)	Industrial Project Management (TECH 496)
		Orientation to Manufacturing	Machine Tool II	Plane Trigonometry (MTH-125) or College Algebra & Trigonometry (MTH-132)	Introductory CAD and Print Reading (MET-100	Graphics/ SolidWorks CAD I (MET-133)	Strength of Materials (MET-218)	Applied Physics (MET-162)	MET Capstone Project (MET-249)	Supervision in Industry (TECH 404)	Human Factors in Industrial Accident Prevention (TECH 434)
		Fabrication I	Fabrication II	Composition I (ENG-101)	Metrology (MET 106)	Statics (MET-217)				Facilities Management Technology (TECH 406)	Manufacturing Distribution Applications (TECH 492)
			Fabrication II & III		Materials and Processes (MET-105)					Plant Location, Layout & Materials Management (TECH 429)	Elective 1 - choose from list below
					Continuous Improvement in Manufacturing (MET-243)					Disaster Preparedness (TECH 432) Management Technology	Elective 2 - choose from list below
Dual Credit, Advanced Placement or Articulated Credit				**Prerequsite Information** Emphasis in Mechanical Design (MD) or Automated Production (AP) should be chosen by the end of Semester 4 Other General Education required for degree.						**Prerequsite Information**	
Recommended Math/Science Math courses through Algebra II with Pre-Calc, Biology, Physical Science, Additional Physical Science				**Recommended Math/Science** Algebra (MTH 096S 6 credits), Plane Trigonometry (MTH-125) or College Algebra & Trigonometry (MTH-132)						**General Education Requirements** 30 hours of general education and bachelor of science prerequisites and 30 hours of NIU technology courses	
Recommended English/Social Studies				**Recommended English/Social Studies)** Composition I (ENG-101), Composition II (ENG-103) or Introduction to Technical writing (ENG-110)						**Recommended English/Social Studies**	
Recommended Electives				**Recommended Electives**						**Recommended Electives** • TECH 305: Green Technologies • TECH 402: Industrial Training & Evaluation • TECH 435: Legal Aspects of Safety • TECH 442: Work Simplification & Measurement • TECH 444: Manufacturing Control Systems • TECH 484: Energy Management	
Professional Learning/Internships				**Professional Learning/Internships**						**Professional Learning/Internships**	
Industry Credentials Earned				**Industry Credentials Earned** NIMS CNC Level 1 Certified, Certified SolidWorks Associate (CSWA), Certified SolidWorks Professional Exam (CSWP)						**Industry Credentials Earned**	
Degree Completion Information FFor more information about Rockford Public Schools – EMITT Academy Manufacturing Operations Pathway, contact Heidi Houy Executive Director College and Career Readiness heidi.houy@rps205.com 815-966-3123				**Degree Completion Information** Manufacturing Engineering Technology program, contact Ron Geary, Vice President, Career and Technical Education/Outreach r.geary@rockvalleycollege.edu 815-921-3101						**Degree Completion Information** Applied Manufacturing Technology program, contact Stacey Deegan, Technology Program Advisor, College of Engineering and Engineering Technology sdeegan@niu.edu 815-753-9943	
Local Entry Level Positions after Degree				**Local Entry Level Positions after Degree**							

Key

- **Career-focused instructional sequence**
- **Academic Competencies**
- **Professional Learning**