

Applied Manufacturing Technology Pathway

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 (P-20 Network, 2015)

- 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 (Rock Vally College)

- 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

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**.

See back panel for more specific program requirements >>

4 Semesters

Coursework at **Rockford Public Schools** – EMITT Academy Manufacturing Operations Pathway

6 Semesters

Coursework at **Rock Valley College** Associates Degree – Manufacturing Engineering Technology

2 Semesters

Coursework at **Northern Illinois University** Bachelor of Science in Technology, Applied Manufacturing Technology (online)

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The table below shows the courses that, if taken in this sequence, should result in completion of the program in the least amount of time while evenly distributing the course load. Some courses are prerequisites for the courses that follow in the sequence and are subject to change. Please consult your institution's advising staff for the latest program requirements when registering for courses.

Missing coursework will hinder a students' progress in the program. To progress seamlessly from one institution to the next, students should obtain a degree from the first institution. All plans of study should meet local and state high school graduation requirements, general education requirements, and prerequisites for advanced courses.

To read this table -

Each column represents a single grade year or semester as noted. Summer coursework may be necessary for some students. All information is taken from online published materials by each institution on its website in the late summer of 2015.

RPS 205 - EMITT Academy Manufacturing Operations Pathway				RVC - Manufacturing Engineering Technology						NIU - Bachelor of Science, Applied Manufacturing Technology	
Grade 9	Grade 10	Grade 11	Grade 12	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 1	Semester 2
Freshman Seminar	Intro to Industrial Technology and Engineering	Introduction to Engineering Design (only at East, Guilford; Project Lead the Way)	Machine Tool I (only at Jefferson)	Beginning Algebra Part II (MTH-092); prerequisite MTH 091	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)
Semester Elective (1 Semester)		Orientation to Manufacturing (only at Jefferson)	Machine Tool II (only at Jefferson)	Intermediate Algebra Part II (MTH 094)	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 (only at Auburn, Guilford)	Fabrication II (only at Guilford)	2 credits or Combined Beg & Intermediate Algebra (MTH 096S 6 credits)	Metrology (MET 106)	Statics (MET-217)		Mechanisms (MET-220) for MD emph. OR CNC/ CAM Operations I (MET-226) for AP emphasis	Machine Design (MET-221) for MD emp. OR Manufacture Methods, Process Plan & Syst (MET-247) for AP emphasis	Facilities Management Technology (TECH 406)	Manufacturing Distribution Applications (TECH 492)
			Fabrication II & III (only at Auburn)	Composition I (ENG-101)	Materials and Processes (MET-105)	Composition II (ENG-103) or Introduction to Technical writing (ENG-110)				Plant Location, Layout & Materials Management (TECH 429)	Elective 1 - choose from list below
				Plane Trigonometry (MTH-125) or College Algebra & Trigonometry (MTH-132)	Continuous Improvement in Manufacturing (MET-243)					Disaster Preparedness (TECH 432) Management Technology	Elective 2 - choose from list below
				Fundamentals of Communication (SPH-131)						Technology Electives (Choose 2) Green Technologies (TECH 305) - MATH 155 and CHEM 110 prereq Industrial Training and Evaluation (TECH 402) - MATH 155 and TECH 265 prereq Legal Aspects of Safety (TECH 435) - Prereqs? Work Simplification (TECH 442) - MATH 155 and TECH 265 prereq Manufacturing Control Systems (TECH 444) - Prereqs? Energy management (TECH 484) - Prereqs?	
Recommended out of school experiences in workplaces, weekend and summer activities:				Emphasis in Mechanical Design or Automated Production should be chosen by the end of Semester 4							

For more information about Rockford Public Schools – EMITT Academy Manufacturing Operations Pathway, contact Dave Carson
Executive Director,
College and Career Readiness
815-966-3123

For more information about the Rock Valley College Manufacturing Engineering Technology program, contact Ron Geary
Vice President, Career and Technical Education/Outreach
815-921-3101

For more information about NIU's Bachelor of Science, Applied Manufacturing Technology program, contact Stacey Deegan
Technology Program Advisor
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