

ENGINEERING CLUSTER

INDUSTRY CERTIFICATIONS

- Certified SolidWorks Associate (CSWA)
- OSHA 10-Hour General Industry Safety

POSSIBLE CAREER PATHWAYS

- Automation Engineer
- Automation Technician
- Electrical Engineering Technician
- Electronic Engineering Technician
- Electrical Engineer
- Manufacturing Engineer
- Manufacturing Technician
- Mechanical Engineer
- Process Control Engineer
- Process Control Technician
- Robotics Engineer
- Robotics Technician
- Technical Illustrator
- Technical Marketing

STARTING SALARY*

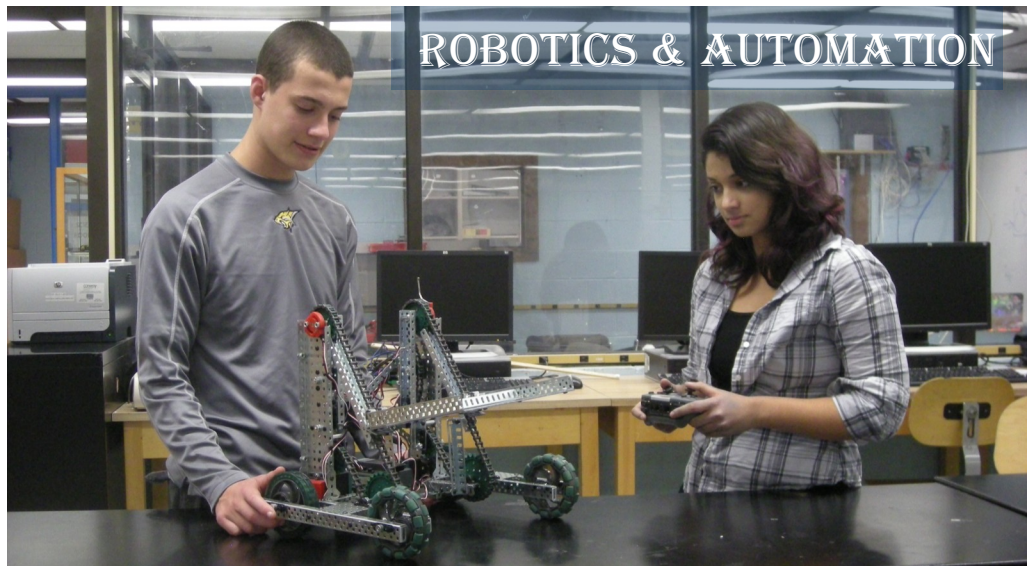
Earnings for Engineering Technicians and Engineers vary by specialty

Median pay averages between:
\$49,100 - \$87,000

**Source: Occupational Outlook Handbook, 2012-2013.*

COLLEGE PARTNERS

- UMass Lowell
- UMass Amherst
- Worcester Polytechnic Institute
- Wentworth Institute of Technology
- Rochester Institute of Technology
- Western New England College
- Rensselaer Polytechnic Institute
- Worcester State University



PROGRAM DESCRIPTION

Robotics and Automation is a rapidly growing field which combines elements of electrical engineering, mechanical engineering and programming. It includes the design, implementation, configuration, operation, programming, maintenance and repair of intelligent machines. Robotic systems are utilized for many applications in manufacturing and assembly, defense, space and underwater exploration, disaster relief as well as many newly emerging service applications.

The Minuteman program teaches the theory of engineering concepts and also provides students with hands on experience with modern state of the art equipment including programmable logic controllers, industrial assembly robots and Vex® Mobile robots as well as use of industry standard software tools like Multisim®, SolidWorks®, and the AutoDesk® Suite of Programs. During their time in the program, students complete three courses designed by Project Lead the Way which can result in nine semester credits at Rochester Institute of Technology. Students also have the opportunity to compete in numerous SkillsUSA national competitions while in the program.

Students completing the program will have an excellent head start in college whether they choose an associate degree program leading to a career as a technician or a four-year program leading to a bachelor's degree in engineering.

COURSE CONTENT

- ▶ Lab Safety
- ▶ Career Awareness
- ▶ Writing Reports
- ▶ Introduction to CAD
- ▶ Intro to Engineering Design
- ▶ Statics & Dynamics
- ▶ Material Science
- ▶ Mechanisms
- ▶ Strength of Materials
- ▶ Thermodynamics
- ▶ Pneumatics & Hydraulics
- ▶ DC Circuits
- ▶ AC Circuits
- ▶ Digital Electronics
- ▶ Industrial Robotics & Automation
- ▶ Programmable Logic Controllers
- ▶ Instrumentation and Process Control
- ▶ Microprocessor Programming
- ▶ Mobile Robotics
- ▶ Measuring Devices
- ▶ Hand Tools & Power Tools

EMPLOYERS HIRING MINUTEMAN GRADUATES

Raytheon, SolidWorks, L3 Communications

ADVISORY COMMITTEE PARTNERS

Raytheon, Worcester Polytechnic Institute

