

Manufacturing Career Cluster

The Manufacturing career cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and process engineering. This career cluster includes occupations ranging from welder and machinist to industrial engineering technician and semi-conductor processing technician.



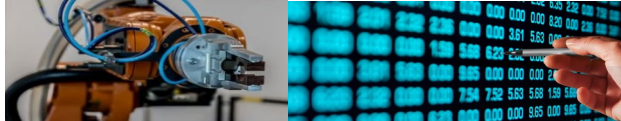
Robotics and Automation Technology (WHS) Statewide Program of Study



The Robotics and Automation Technology program of study focuses on occupational and educational opportunities associated with the assembly, operation, maintenance, and repair of electromechanical equipment or devices. This program of study includes exploration of a variety of mechanical fields, including robotics, refinery and pipeline systems, deep ocean exploration, and hazardous waste removal.

Secondary Courses for High School Credit

Level 1	T901 Principles of Applied Engineering (1/YL)
Level 2	T902 Manufacturing Engineering Technology I (1/YL)
Level 3	T915 Robotics I (1/YL) And T923 Robotics II (1/YL)
Level 4	T810 Practicum in Manufacturing-Robotics (2/YL)



Example Postsecondary Opportunities

Associate Degrees

- Instrumentation Technology
- Industrial Technology
- Robotics Technology
- Automation Engineer Technology

Bachelor's Degrees

- Mechanical Engineering
- Electrical Electronics Engineering
- Electrical, Electronic, and Communications Engineering Technology
- Electromechanical Engineering Technology

Master's, Doctoral, and Professional Degrees

- Mechanical Engineering
- Engineering/Industrial Management
- Industrial Engineering
- Electrical and Electronics Engineering

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> • Intern with a robotics technician working at a manufacturing plant • Shadow a PLC programmer
Expanded Learning Opportunities	<ul style="list-style-type: none"> • Tour a manufacturing facility • Participate in SkillsUSA or TSA • Build a robot and participate in a robotics competition



Aligned Industry-Based Certifications

- FANUC Robot Operator I
- Autodesk Associate (Certified User) Fusion 360

Example Aligned Occupations

Computer Numerically Controlled Tool Operators

Median Wage: \$46,353
Annual Openings: 1,146
10-Year Growth: 10%

Semiconductor Processing Technicians

Median Wage: \$36,902
Annual Openings: 621
10-Year Growth: 9%

Industrial Engineers

Median Wage: \$100,000
Annual Openings: 1,898
10-Year Growth: 26%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.

For more information visit: <https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>

