

# Mechatronics Engineering Technology

The Mechatronics Engineering Technology major focuses on the integration of mechanical, electrical, computer, and control systems to design and maintain automated systems and advanced manufacturing technologies. Students gain practical experience in robotics, automation, electronics, and systems design. Graduates are prepared to work in high-tech, interdisciplinary environments to improve productivity, reliability, and innovation in modern manufacturing and production systems. Typical industry sectors include automotive manufacturing, aerospace, industrial automation, robotics, logistics, energy, and smart technologies.

## Job Title Examples:

- Mechatronics Technician
- Automation Engineer
- Controls Technician
- Robotics Specialist
- Maintenance Engineer
- Industrial Systems Integrator
- PLC Programmer
- Manufacturing Engineer
- Instrumentation Technician
- Systems Test Engineer

## Hard and Soft Skills Needed:

### Hard Skills:

1. Programmable Logic Controllers (PLC)
2. Robotics and Automation Systems
3. CAD (Computer-Aided Design)
4. Electrical and Mechanical Troubleshooting
5. Control Systems and Instrumentation

### Soft Skills:

1. Critical Thinking
2. Communication
3. Time Management
4. Team Collaboration
5. Attention to Detail

### **Further Education/Training Required and/or Suggested:**

A BS in Mechatronics Engineering Technology qualifies students for entry-level roles, but additional certifications and training can support career advancement.

#### **To Enter the Field:**

- Certified Manufacturing Technologist (CMfgT): Validates knowledge in manufacturing processes and automation technologies.

#### **To Advance:**

- Certified Manufacturing Engineer (CMfgE): Suitable for those pursuing leadership in manufacturing engineering.
- Six Sigma Certification: Ideal for roles in process improvement and quality assurance.
- Certified Control Systems Technician (CCST): Relevant for advanced automation and systems control careers.
- Robotics Certification (e.g., FANUC, ABB): Valuable for specialized roles in robotic systems programming and maintenance.

### **Professional or Student Associations:**

- Society of Manufacturing Engineers (SME)
- International Society of Automation (ISA)
- Robotics Industries Association (RIA)
- American Society for Quality (ASQ)
- National Society of Black Engineers (NSBE)
- Society of Women Engineers (SWE)