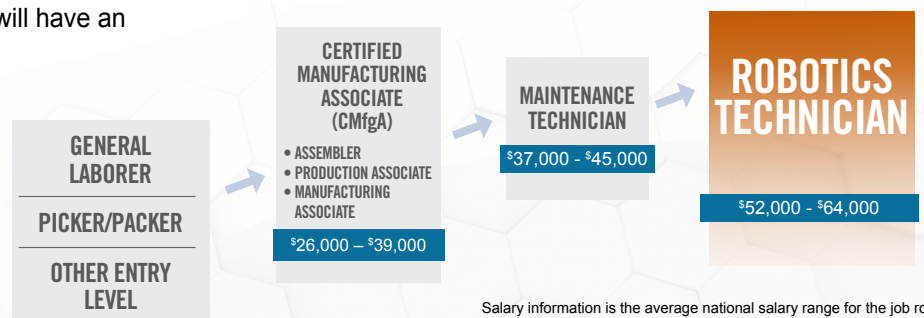# ROBOTICS TECHNICIAN

![Manpower logo]

PREPARE FOR A CAREER AS A ROBOTICS TECHNICIAN

Robotics Technicians help design, test, install, maintain, troubleshoot, and fix robots and automation control system.

Upon completion of this program, students will have an understanding of:

- AC and DC fundamentals and how they are applied to electrical systems
- Electrical Instruments and circuits
- Mechanical systems including bearings, belt drives, gears & power variables
- Hydraulics, pneumatics, and fluid systems
- Threaded and non-threaded fasteners
- Rigging as it relates to equipment, inspection and safety
- The basics of PLCs including hardware, networking, programming and registers
- PLC control devices
- Robotic drives, hardware, and components
- Robot installation, maintenance and troubleshooting
- Concepts of robot programming and vision systems
- How robots collaborate within a digital enterprise strategy

GENERAL LABORER

PICKER/PACKER

OTHER ENTRY LEVEL

CERTIFIED MANUFACTURING ASSOCIATE (CMfgA)
- ASSEMBLER
- PRODUCTION ASSOCIATE
- MANUFACTURING ASSOCIATE

$26,000 – $39,000

MAINTENANCE TECHNICIAN

$37,000 - $45,000

ROBOTICS TECHNICIAN

$52,000 - $64,000

Salary information is the average national salary range for the job role.
Source: U.S. Bureau of Labor Statistics

The average national salary range for **robotics technician** is

$52,000 -$64,000

Source: U.S. Bureau of Labor Statistics

These are the Units and Courses required to complete the Robotics Technician program:

Unit 1: Robotics I
Introduction to Robotics
Robot Components
Robotic Drives, Hardware, and
  Components
Robot Safety

Unit 2: CNC & Electrical Systems I
Introduction to CNC Machines
Control Panel Functions for the CNC
  Lathe
Control Panel Functions for the CNC Mill
AC Fundamentals
DC Circuit Components

Unit 3: Fasteners
Introduction to Fastener Threads
Overview of Non-Threaded Fasteners
Overview of Threaded Fasteners
Threaded Fastener Selection
Tools for Threaded Fasteners
Understanding Torque

Unit 4: Electrical Systems II
Conductor Selection
Electrical Instruments
Electrical Print Reading
Introduction to Circuits
Introduction to Magnetism
NEC® Overview

Unit 5: Fluid Systems
Introduction to Fluid Conductors
Fittings for Fluid Systems
The Forces of Fluid Power
Introduction to Hydraulic Components
Introduction to Pneumatic Components
Safety for Hydraulics and Pneumatics

Unit 6: Mechanical Systems
Bearing Applications
Belt Drive Applications
Clutch and Brake Applications
Gear Applications
Mechanical Power Variables
Spring Applications

Unit 7: Rigging
Intro to Machine Rigging
Rigging Equipment
Rigging Inspection and Safety
Rigging Mechanics
Overview of Soldering

Unit 8: Programmable Logic Controls (PLC) I
Introduction to PLCs
Hardware for PLCs
Networking for PLCs
Basic Programming for PLCs
Hand-Held Programmers of PLCs
Overview of PLC Registers

Unit 9: Programmable Logic Controls (PLC) II
PID for PLCs
PLC Counters and Timers
PLC Inputs and Outputs
PLC Installation Practices
PLC Program Control Instructions
Sequencer Instructions for PLCs

Unit 10: Programmable Logic Controls (PLC) III
Control Devices
Limit Switches and Proximity Sensors
Relays, Contactors, and Motor Starters
Basics of Ladder Logic
Data Manipulation
Numbering Systems and Codes

Unit 11: Robotics II
End Effectors
Robot Axes
Robot Installations
Robot Maintenance
Robot Troubleshooting

Unit 12: Robotics III
Robot Sensors
Concepts of Robot Programming
Applications for Robots
Vision Systems
Introduction to Machine Learning and
  Artificial Intelligence
Machine Learning and Artificial
  Intelligence Applications

Unit 13: Robotics IV
Automated systems and control
Industrial Network Intelligence
Introduction to Collaborative Robots
Robot Control Systems
Introduction to Digital Enterprise Strategy
Data and Design Management for Digital
  Enterprises

This online upskilling opportunity provides new skills to help you get ahead. Classes are accessible on desktops/laptops, tablets, and smartphones via the Tooling U-SME app. Each course takes approximately one hour to complete.

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