

ENGINEERING TECHNICIAN

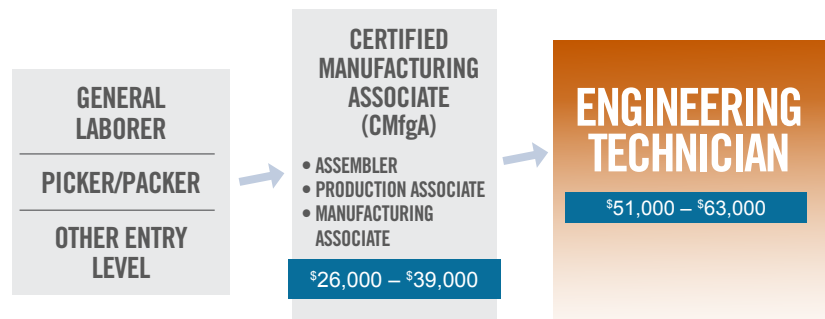


PREPARE FOR A CAREER AS AN ENGINEERING TECHNICIAN

Engineering Technicians work alongside a qualified team of engineers and technologists to ensure all machinery used to bring a design to life remains functional and working.

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

- Manufacturing-related math calculations
- Electrical systems and components
- Inspection instruments, tolerancing, print reading, and troubleshooting principles
- Common components of CNC machine tools controls and G code programming
- Basics of industrial robotics, including types, applications, and programming methods and safety protocols
- Additive Manufacturing safety, processes, and materials
- Fluid power transmission systems including hydraulic and pneumatics
- Material properties for: ferrous and non-ferrous metals and alloys, ceramics, plastics/polymers, and composites
- Metal cutting processes
- PLC programming for Siemens and Allen Bradley/Rockwell
- Process design and quality concepts



The average national salary range for **engineering technicians** is **\$51,000 - \$63,000**

Source: U.S. Bureau of Labor Statistics



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

Unit 1: Intro to Materials & Manufacturing

Introduction to Assembly 101
Introduction to Physical Properties 101
Introduction to Mechanical Properties 111
Lean Manufacturing Overview 101

Unit 2: Material Types I

Introduction to Metals 121
Introduction to Plastics 131
Introduction to Ceramics 141
Introduction to Composites 151

Unit 3: Electrical Systems

Introduction to Circuits 201
DC Circuit Components 221
AC Fundamentals 241
Series Circuit Calculations 301
Parallel Circuit Calculations 311

Unit 4: Material Types II

Classification of Steel 201
Hardness Testing 221
Ferrous Metals 231
Nonferrous Metals 241
Thermoplastics 251

Unit 5: Metal Cutting

Cutting Processes 111
Lathe Tool Geometry 351
Mill Tool Geometry 361
Drill Tool Geometry 371

Unit 6: Applied Math I

Units of Measurement 112
Algebra Fundamentals 141
Geometry: Lines and Angles 151
Geometry: Triangles 161
Geometry: Circles and Polygons 171

Unit 7: Inspection

Basics of Tolerance 121
Blueprint Reading 131
Introduction to GD&T 301
Troubleshooting 181

Unit 8: Welding & Machining

Introduction to Welding Processes 151
Punch and Die Operations 120
Supporting and Locating Principles 111
Basics of G Code Programming 231
Automated Systems and Control 135

Unit 9: Materials & Machines

Essentials of Heat Treatment of Steel 211
Thermosets 261
Fixture Design Basics 201
Forces of Machines 121
Hand and Power Tool Safety 201

Unit 10: Applied Math II & Additive Manufacturing

Introduction to Additive Manufacturing 111
Additive Manufacturing Safety 121
Additive Manufacturing Methods and Materials 141
Applied and Engineering Sciences 110
Manufacturing Process Applications: Part I 124
Manufacturing Process Applications: Part II 125

Unit 11: Fluid Systems

The Forces of Fluid Power 201
Power Transmission Components 201
Introduction to Hydraulic Components 221
Introduction to Pneumatic Components 231

Unit 12: Programmable Logic Controls (PLCs)

Introduction to PLCs 201
Basics of Ladder Logic 221
Networking for PLCs 261
Basics of Siemens PLCs 200
Siemens PLC Communication 230
Basic Ladder Diagram Programming for Siemens PLCs 280

Unit 13: Quality

ISO 9001: 2015 Review 122
Process Design and Development 133
Product Design and Development 134
Production System Design and Development 136
Equipment/Tool Design and Development 137

Unit 14: Interpersonal Aspects of Maintenance

SPC Overview 211
Quality and Customer Service 175
Manufacturing Management 180
Personal Effectiveness 190

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.