



## ENGINEERING

### ENGINEERING FUNDAMENTALS

Units of Measurement

Basics of Tolerance

Blueprint Reading

Algebra Fundamentals

Geometry: Lines and Angles

Geometry: Triangles

Geometry: Circles and Polygons

Trigonometry: The Pythagorean Theorem

Trigonometry: Sine, Cosine, Tangent

Statistics

Introduction to Physical Properties

Introduction to Mechanical Properties

Introduction to Metals

Essentials of Heat Treatment of Steel

Lean Manufacturing Overview

Cutting Processes

Introduction to CAD and CAM for Machining

Electrical Units

Introduction to Circuits

DC Circuit Components

AC Fundamentals

Introduction to Ceramics

Introduction to Additive Manufacturing

Additive Manufacturing Safety

Additive Manufacturing Methods and Materials

Intro to Assembly

Introduction to Composites

### ENGINEERING TECHNICIAN

Supporting and Locating Principles

Fixture Design Basics

Introduction to GD&T

Hand and Power Tool Safety

Classification of Steel

Hardness Testing

Ferrous Metals

Nonferrous Metals

Thermosets

ISO 9001:2015 Review

Troubleshooting

SPC Overview

Lathe Tool Geometry

Mill Tool Geometry

Drill Tool Geometry

Basics of G Code Programming

Punch and Die Operations

Series Circuit Calculations

Parallel Circuit Calculations

Basics of Siemens PLCs

Siemens PLC Communication

Basic Ladder Diagram Programming for

Siemens PLCs

Forces of Machines

Introduction to PLCs

Basics of Ladder Logic

Networking for PLCs

The Forces of Fluid Power

Introduction to Hydraulic Components

Introduction to Pneumatic Components

Power Transmission Components

Introduction to Welding Processes

Applied and Engineering Sciences

Manufacturing Process Applications I

Manufacturing Process Applications II

Product Design and Development

Process Design and Development

Production System Design and

Development

Equipment/Tool Design and Development

Automated Systems and Control

Quality and Customer Service

Manufacturing Management

Personal Effectiveness