

1. Electrical, Electronic Circuits, Test Equipment, AC/DC Knowledge	Electrical Units - Circuits - Magnetism - DC Circuit Components - Series Circuit Calculations - Parallel Circuit Calculations - AC Fundamentals - Electrical Instruments - Electrical Print Reading - DC Power Sources - AC Power Sources - Battery Selection (Basic Electrical Lab)
2. Ability to Read and Understand Blueprints	Math: Fundamentals, Fractions and Decimals, Units of Measurement - Shop: Geometry, Algebra, Trig - Basics of Tolerance - Blueprint Reading - Geometry: Lines and Angles, Triangles, Circles and Polygons - Trig: Pythagorean Theorem - Interpret Blueprints
3. Machine Control Circuits and Schematics	Electric Motors - Symbols and Diagrams for Motors - Logic and Line Diagrams - DC Motor Applications - Solenoids - NEC - Conductor Selection - AC Motor Applications Contractors and Motor Starters - Control Devices - Reversing Motor Circuits - Distribution Systems (Motors and Motor Controls Lab, Wiring and Distribution Lab)
4. Welding (stick, mig, tig)	Welding - SMAW - GMAW - GTAW - Fluxcore - Oxy-Fuel Welding and Brazing - Cutting Operations: Oxy-Fuel, Plasma, Carbon Arc - Fabrication - Quality Control - Weld Testing - Robotic Welding - Blueprint Reading and Interpretation of Drawings and Symbols
5. Hydraulics & Pneumatics Knowledge and Troubleshooting Ability	Fluid Systems - Safety for Hydraulics and Pneumatics - Forces of Fluid Power - Hydraulic Components - Pneumatic Components - Fluid Conductors - Fittings for Fluid Systems - Preventive Maintenance for Fluid Systems - Hydraulic Power Variables - Pneumatic Power Variables - Hydraulic Power Sources - Pneumatic Power Sources - Fluid System Print Reading - Hydraulic Control Valves - Pneumatic Control Valves - Actuator Applications - Basic Hydraulic System Design - Basic Pneumatic Circuit Design - Hydraulic Fluid Selection - Contamination and Filter Selection (Basic Fluid Power Lab, Advanced Fluid Power Lab)
6. Simple Fabrication	Welding Types and Methods - Chose the right Machine for the Job - Proper Machine Settings - Welding Various Joints
7. PLC Programming and Troubleshooting	Timers and Counters - Electronic Semiconductor Devices - Photonic Semiconductor Devices - Limit Switches and Proximity Sensors - Photoelectric and Ultrasonic Devices - Reduced Voltage Starting - Solid State Relays and Starters - Deceleration Methods - Acceleration Methods (Basic Relay Controls Lab, Electronic Sensors Lab, Manual Control and Safety Devices Lab)
8. CNC Programming and Troubleshooting	Set-up and Operation of CNC Mills and Lathes - CNC Programming - G-Codes - Program Editing and Troubleshooting - Tool Offsets
9. Plumbing, Pumps, Feed Lines, PVC, CPVC, Copper & Metal Piping	Fluid Systems - Safety for Hydraulics and Pneumatics - Forces of Fluid Power - Hydraulic Components - Pneumatic Components - Fluid Conductors - Fittings for Fluid Systems - Preventive Maintenance for Fluid Systems - Hydraulic Power Variables - Pneumatic Power Variables - Hydraulic Power Sources - Pneumatic Power Sources - Fluid System Print Reading - Hydraulic Control Valves - Pneumatic Control Valves - Actuator Applications - Basic Hydraulic System Design - Basic Pneumatic Circuit Design - Hydraulic Fluid Selection - Contamination and Filter Selection (Basic Fluid Power Lab, Advanced Fluid Power Lab)
10. Basic Knowledge of Computers	Personal Computers Windows 7 - Personal Computers Windows 8.1 - Word 2010 - Excel 2010 - PowerPoint 2010 - Getting the Most out of Microsoft Outlook
11. Proper Workplace Etiquette	Outclass the Competition - Business Etiquette - Emotional Intelligence
12. Leadership Skills	Coaching for Results - Secrets to Organization Change - Fundamentals of Supervision - Filling Your Leadership Toolbox - Compression Planning Institute - Leadership Certificate
13. Ability to Work in a Team Environment	Build Trust through Accountability - Build Teams - Prevent & Address Workplace Conflict - Interpersonal & Influential Communication Skills - Communication Strategies
14. Lean Manufacturing	Concepts of 5S and Visual Controls - Value Stream Mapping - Setup Reduction and Total Productive Maintenance - LEAN Concepts
15. Basic Industrial Mechanics	Basic Measurement - Linear Instrument Characteristics - Calibration Fundamentals - Materials - Structure of Metals - Plastic Materials - Mechanical Properties of Metal - Physical Properties of Metal (Measurements Lab) - Mechanical Systems - Forces of Machines - Power Transmission Components - Mechanical Power Variables - Lubrication Fundamentals - Bearing Applications - Spring Applications - Belt Drive Applications - Gear Geometry - Gear Applications - Clutch and Brake Applications (Lubrication Systems Lab, Basic Mechanical Lab, Advanced Mechanical Lab)

16. Heating, Ventilation, and Air Conditioning (HVAC)	Heating Systems, Cooling Systems, Installation Techniques, HVAC Loads, System Balancing and Mechanical & Electrical Troubleshooting