

Corporate Office

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Electro Pneumatics

Course Description: This course introduces the concept of Electro Pneumatics. The course begins by covering fundamental industrial electrical concepts and components. This includes basic laws, series and parallel circuits, magnetism, batteries, sensors, transducers, solenoids, and more. Next we look at fundamental electro pneumatic concepts and components (switches, controls, relays, solenoid valves, etc.). The remaining portion of the class is then dedicated to combining the pneumatic and electrical components into electro pneumatic circuits. Students will spend a majority of their time designing and building circuits.

Prerequisites: Level 1 Pneumatics and basic circuit understanding or equivalent knowledge

Textbook: TBD.

Learning Objectives:

- Define Ohm's Law
- Describe series and parallel connections
- Define AC and DC current
- Describe the function and operation of relays
- Describe the function and operation of solenoids
- Discuss magnetic force and air gaps
- Identify different switch assemblies
- Describe the function and operation of different sensors
- Identify symbols of standard electrical components
- Identify symbols of standard pneumatic components
- State circuit standards
- Design basic ladder diagrams
- Design basic circuits using standard electrical and pneumatic symbology
- Describe timing circuits
- Discuss pilot and direct control
- Describe the function of counters in circuits
- Build working circuits from schematics