

IEC's Electrical Apprenticeship Program 3rd Year Course Outline



First Semester

Practical Guide to OSHA and NFPA 70E
Introduction to Grounding and Bonding
General Requirements for Grounding and Bonding
System Grounding: Grounded Conductors, Systems Required to be Grounded, and Systems Not Permitted to be Grounded
System Grounding: Separately Derived Systems, Main
Bonding Jumpers, and System Bonding Jumpers
Grounding Electrode Systems and Grounding Electrode Conductors
Line-Side and Load-Side Bonding
Equipment Grounding and Equipment Grounding Conductors
Grounding of Specific Equipment & Conditions
First Semester Mid-Term Review and Exam
Printreading: Project Design, Development, and Specifications
Printreading: Site, Civil, Survey, and Structural Drawings
Printreading: Architectural Drawings — Lines, Dimensions, and Wall Types
Printreading: Architectural Drawings — Schedules, Details, and Coordination
Printreading: “MEP”, “M”, “E”, and “P” Drawings
Leadership: Foreman Training
First Semester Exam

Second Semester

Test Instruments and Test Instrument Safety
Toggle Switch, Push Button, and Basic Load Symbols — Introduction to Ladder Diagrams
Introduction to Contactors and Relays
Applications Using Contactors and Relays
Manual and Automatic Control Devices
Ladder Diagram Applications
Automatic-Control Practical Applications
Magnetic Motor Starters
Magnetic Motor Starters and Pilot Devices: Practical- Application Emphasis on Holding Contacts
Second Semester Mid-Term Review and Exam
Motor Overload Protection, Motor Power Connection, and Practice Scenarios
Magnetic Motor Starters: Practical-Application Emphasis on Overload Protection
Motor Reversing: Controllers and Connections
Magnetic Motor Starters: Practical-Application Emphasis on Reversing Motors
Latching Relays, Alternating Relays, and Jogging Circuits
Magnetic Motor Starters: Practical-Application Emphasis on Multimotor Equipment
Second Semester Final Exam



Mid-South IEC

2814 Stage Center Drive, Bartlett TN, 38134

Phone: (901) 682-3546 www.midsouthiec.org www.facebook.com/msiec