

IEC's Electrical Apprenticeship Program 4th Year Course Outline



First Semester

Energized Electrical Work Relative to NFPA 70E
Power Distribution Systems and Phase-Loss Monitors
Solid-State Relays and Phase-Loss Lab
Timing Relays: On-Delay, Interval, and Recycle
Timing Relays: Practical Application of On-Delay, Recycle, and Interval Timers (Stop Light)
Timing Relays: Off-Delay, One-Shot, and Multifunction
Timing Relays: Practical Application of Off-Delay, One-Shot, and Multifunction Timers (Lubricating Oil Pump)
Counters and Sensors
Mid-Term Review and Exam
Motor Starting Methods
Motor Drives — Accelerating and Decelerating Methods
Introduction to Programmable Controllers
Advanced Lab — Automatic Car Wash
Energy Management and Building Automation Including Latching Relays
Fire Suppression Systems and Advanced Lab
Preventive Maintenance and Troubleshooting
First Semester Final Exam

Second Semester

Introduction, Definitions, and Boxes
Cables and Underground Installations
Raceways and Conductors
Dwelling Units: General Provisions
Dwelling Units: Specific Provisions
Services: Equipment, Working Space, Grounding & Bonding
Commercial Installations
Hazardous Locations and Health Care Facilities
Mid-Term Review and Exam
Miscellaneous Occupancies and Special Equipment
Industrial Services, Transformers, and Feeder Taps
Motors and Power Quality
Service and Load Calculations
BCES Application
Fire Alarm Systems – Introduction and Overview
Voice/Data/Video—Introduction and Overview
Second Semester Final Exam



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