
SECTION HEADING

TRAN 1111: Electrical Fundamentals

Description

Electrical Fundamentals defines the basic fundamentals of electricity and electronics also identifying sources of electricity. Circuits, magnetism, resistance, coils, capacitance, instruments, diodes, and solid-state devices will be introduced. Emphasis is placed on the testing and repair/replacement of the electrical systems, starter motors, and alternators. Students will identify parts, system operation, and component testing.

Credits

3

Prerequisite

None

Corequisite

None

Topics to be Covered

1. Basic Electrical Fundamentals
2. Electrical Systems
3. Solid-state systems
4. Alternator and starter rebuild and testing
5. Testing and repair of electrical systems

Learning Outcomes

1. Demonstrate knowledge of electrical series parallel and combination circuits
2. Demonstrate proper use of digital multimeter
3. Inspect and test fusible links, circuit breakers, and relays
4. Perform solder repair of electrical wire
5. Inspect and test switches, connectors, and wires
6. Comply with personal and environmental safety practices associated with clothing, eye protection, hand tools, power equipment, and proper ventilation
7. Demonstrate safe handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations
8. *The required outcomes follow the Auto Service Technician (AST) model of the Board of the National Institute for Automotive Service Excellence (ASE)

Credit Details

Lecture: 1

Lab: 2

OJT: 0

MnTC Goal Area(s): None