



**BAKER COLLEGE**  
**STUDENT LEARNING OUTCOMES**

**AST 2410A Electrical/Electronic Systems II**  
**4 Semester Hours**

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**Student Learning Outcomes & Enabling Objectives**

1. Demonstrate general electrical system diagnosis techniques.
  - a. Diagnose the cause(s) of excessive key-off battery drain (parasitic draw); determine needed action. P-1
  - b. Check electrical/electronic circuit waveforms; interpret readings and determine needed repairs. P-2
  - c. Repair data bus wiring harness. P-1
2. Demonstrate starting system diagnosis and repair techniques.
  - a. Demonstrate knowledge of an automatic idle-stop/start-stop system. P-2
3. Demonstrate instrument cluster and driver information systems diagnosis and repair techniques.
  - a. Inspect and test gauges and gauge sending units for causes of abnormal readings; determine needed action. P-2
  - b. Diagnose (troubleshoot) the causes of incorrect operation of warning devices and other driver information systems; determine as required. P-2
  - c. Reset maintenance indicators as required. P-2
4. Demonstrate body electrical systems diagnosis and repair.
  - a. Diagnosis operation of security/anti-theft systems and related circuits (such as: theft deterrent, door locks, remote keyless entry, remote start, and starter/fuel disable); determine needed repairs. P-2
  - b. Diagnose operation of entertainment and related circuits (such as: radio, DVD, remote CD changer, navigation, amplifiers, speakers, antennas, and voice-activated accessories); determine needed repairs. P-3

- c. Diagnose body electronic systems circuits using a scan tool; check for module communication errors (data communication bus systems); determine needed action. P-2
  - d. Describe the process for software transfer, software updates, or reprogramming of electronic modules. P-2
5. Apply charging system diagnosis and repair techniques.
- a. Perform charging system output test; determine needed action. P-1
  - b. Diagnose (troubleshoot) charging system for causes of undercharge, no-charge, or overcharge conditions. P-1
  - c. Inspect, adjust, and/or replace generator (alternator) drive belts: check pulleys and tensioners for wear; check pulley and belt alignment. P-1
  - d. Remove, inspect, and/or replace generator (alternator). P-1
  - e. Perform charging circuit voltage drop tests; determine action needed. P-1

Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

## **Big Ideas**

General electrical systems diagnosis techniques  
Automatic idle-stop/start-stop system diagnosis and repair  
Driver information systems diagnosis and repair  
Body electrical diagnosis and repair  
Charging system diagnosis and repair

## **Essential Questions**

How do you perform general electrical systems diagnosis techniques?  
How do you perform automatic idle-stop/start-stop system diagnosis and repair?  
How do you perform driver information systems diagnosis and repair?  
How do you perform body electrical diagnosis and repair?  
How do you perform charging system diagnosis and repair?

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These SLOs are not approved for experiential credit.

**Effective: Fall 2023**