

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. AUTO

COURSE NUMBER: 2146

NUMBER OF CREDITS: 4

Lecture: 1 Lab: 3 OJT: 0

Course Title:

Body Computer Controlled Electrical Systems

Catalog Description:

Body Computer Controlled Electrical Systems explains the theory of operation, diagnosing, and repair of electrical components such as power windows, power seats, ABS brakes, power steering, automatic computer control transmission, A.C climate control, theft deterrent systems, and chassis electronics control systems.

Prerequisites or Necessary Entry Skills/Knowledge:

TRAN 1100

FULFILLS MN TRANSFER CURRICULUM AREA(S) (*Leave blank if not applicable*)

- Goal 1: Communication: By meeting the following competencies:
- Goal 2: Critical Thinking: By meeting the following competencies:
- Goal 3: Natural Sciences: By meeting the following competencies:
- Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- Goal 7: Human Diversity: By meeting the following competencies:
- Goal 8: Global Perspective: By meeting the following competencies:
- Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- Goal 10: People and the Environment: By meeting the following competencies:

Topics to be Covered

Electrical system fundamentals

Electric components of the power steering

Power windows and seats

Automatic computer control transmission

Theft deterrent systems

Chassis electronics control systems

Student Learning Outcomes

Diagnose (troubleshoot) the causes of brighter-than-normal, intermittent, dim, or no light operation; determine needed action.

Identify system voltage and safety precautions associated with high-intensity discharge headlights
Describe operation of comfort and convenience accessories and related circuits (such as: power window, power seats, pedal height, power locks, truck locks, remote start, moon roof, sun roof, sun shade, remote keyless entry, voice activation, steering wheel controls, back-up camera, parking assist, cruise control, and auto dimming headlamps); determine needed repairs.
Describe operation of safety systems and related circuits (such as: horn, airbags, seat belt pretensioners, occupancy classification, wipers, washers, speed control/collision avoidance, heads-up display, parking assist, and back-up camera); determine needed repairs
Demonstrate testing of body electronic system circuits using a scan tool; check for module communication errors (data communication bus systems); determine needed action.
Inspect and test gauges and gauge sending units for causes of abnormal readings; determine needed action.
Diagnose (troubleshoot) the causes of incorrect operation of warning devices and other driver information systems; determine needed action.
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
*The required outcomes follow the Auto Service Technician (AST) model of the Board of the National Institute for Automotive Service Excellence (ASE)

Is this course part of a transfer pathway: Yes No

Revised Date: 04/2022