AUT 270 : AUTOMOTIVE CONTROLLER SYSTEMS I

Transcript title

Auto Controller Systems I

Credits

4

Grading mode

Standard letter grades

Total contact hours

80

Lecture hours

20

Lab hours

60

Prerequisites

AUT 206.

Course Description

Technological advancements in modern vehicles have changed how we perform diagnosis. This course examines various methods of those enhancements of automotive drive systems, with major emphasis on electronic programing, and how to accurately repair them, using computers and scan tools. This course will require the student technician to build on current diagnostic routines into advanced applications.

Course learning outcomes

1. Describe the evolution and use of CAN operational vehicles.
2. Preform various scan tool operations to update vehicle modifications.
3. Perform vehicle data list, parameter IDs, and monitor IDs extraction and diagnosis.
4. Describe vehicle reprograming for performance and emissions.
5. Perform vehicle reprograming with software updates.
7. Communicate technical information verbally and in writing.
8. Describe and practice safety procedures while working in an automotive shop environment.

Content outline

1. CAN (controller area network) history and concepts
2. OBD/encoding
3. Error handling
4. Time triggered protocols- FlexRay
5. Media characteristics/the vehicle level
6. ECU level/IC level/EMC
7. Standards/class A, B, C protocols
8. Diag., air bag, x-by-wire, multi media, wireless protocols
9. Data link usage
10. Perform vehicle reprogramming for updates and software issues
11. CAN-oe, CAN-open

Required materials

Required textbook and special gear, see syllabus for details.