AUT 271 : AUTOMOTIVE CONTROLLER SYSTEMS II

Transcript title
Auto Controller Systems II

Credits
4

Grade mode
Standard letter grades

Contact hours total
80

Lecture hours
20

Lab hours
60

Prerequisites
AUT 206.

Recommended preparation
AUT 270.

Description
Vehicle performance is enhanced by a variety of methods. This course examines various methods of performance enhancements of automotive drive systems with major emphasis on electronic programing. Manufacturer scan tools will be included with vehicle testing.

Learning outcomes
1. Describe vehicle performance before and after vehicle hardware and software modification.
2. Calculate volumetric efficiency of operational vehicles.
3. Perform On Board Diagnostics (OBD), analyze the results, and report the findings
4. Perform Vehicle Dynamometer Operation.
5. Describe and perform vehicle reprogramming for performance and emissions
6. Communicate technical information, verbally and in writing.
7. Describe and practice safety procedures while working in an automotive shop environment.

Content outline
1. Class intro/review syllabus
2. Dyno basics
3. Tuning platforms
4. Engine types
5. Bore vs. stroke
6. Cylinder head types
7. Pistons, rods
8. Crank types
9. Induction types
10. Engine additives
11. Drivetrain types
12. Fuel types
13. Fuel delivery types
14. Diesel fuel delivery types
15. Horsepower vs. torque
16. Engine management programs
17. Types of racing
18. Start tuning checklist
19. Troubleshooting
20. Common engine failures and how to avoid them

Required materials
Required textbook and special gear, see syllabus for details.