**BARTON COMMUNITY COLLEGE**

**COURSE SYLLABUS**

# **GENERAL COURSE INFORMATION**

Course Number: AUTO 1124

Course Title: Engine Performance III

Credit Hours: 4

Prerequisite: AUTO 1122 Engine Performance II

Division/Discipline: Workforce Training and Economic Development/Automotive Technology

Course Description: Engine Performance III is a capstone course designed to build upon students’ cumulative knowledge of engine mechanical, powertrain management and emission control systems. Students will evaluate test results and perform engine performance related repairs in a live-shop environment.

# **INSTRUCTOR INFORMATION**

# **COLLEGE POLICIES**

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. The student is responsible for learning the rules of, and avoiding instances of, intentional or unintentional plagiarism. Information about academic integrity is located in the Student Handbook.

The College reserves the right to suspend a student for conduct that is determined to be detrimental to the College educational endeavors as outlined in the College Catalog, Student Handbook, and College Policy & Procedure Manual. (Most up-to-date documents are available on the College webpage.)

Any student seeking an accommodation under the provisions of the Americans with Disability Act (ADA) is to notify Student Support Services via email at disabilityservices@bartonccc.edu.

1. **COURSE AS VIEWED IN THE TOTAL CURRICULUM**

Engine Performance III is a capstone course in the area of engine performance. This course follows the curriculum standards defined by NATEF (National Automotive Technicians Education Foundation.

# **ASSESSMENT OF STUDENT LEARNING**

Barton Community College is committed to the assessment of student learning and to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton, as a learning college, in finding ways to improve student learning.

Course Outcomes, Competencies, and Supplemental Competencies:

1. Analyze and repair fuel system concerns.

Linked NATEF standards 8.D.1 – 8.D.13

1. Evaluate engine performance and drivability concern.
2. Interpret current and voltage waveforms.
3. Interpret scan data and diagnostic trouble codes.
4. Evaluate test results.
5. Estimate repair costs.
6. Perform fuel delivery, air induction, and fuel injection maintenance and repair.
7. Analyze and repair ignition system concerns.

Linked NATEF standards 8.C.1 – 8.C.8

1. Evaluate engine performance and drivability concern.
2. Interpret current and voltage waveforms.
3. Interpret scan data and diagnostic trouble codes.
4. Evaluate test results.
5. Estimate repair costs.
6. Perform ignition system maintenance and repair.
7. Analyze and repair emission system concerns.

Linked NATEF standards 8.E.1.1 – 8.E.6.3

1. Interpret 5-gas emissions data.
2. Interpret current and voltage waveforms.
3. Interpret scan data and diagnostic trouble codes.
4. Evaluate test results.
5. Estimate repair costs.
6. Perform repairs associated with the emission control system.
7. Analyze and repair engine management systems.

Linked NATEF standards 8.B.1 – 8.B.9

1. Evaluate engine management sensors.
2. Evaluate engine management actuators.
3. Interpret scan data.
4. Formulate a diagnostic and repair strategy.

Linked NATEF standards 8.A.1 – 8.F.4

1. Interpret/identify customer complaint.
2. Identify factory service bulletins.
3. Interpret scan data and diagnostic trouble codes.
4. Perform visual inspection and identify possible causes.
5. Interpret vehicle repair information (wiring diagrams, test procedures).
6. Evaluate test results.
7. Assess repair needs.
8. Perform repairs in accordance with recommended service procedures.
9. Verify correct repair.
10. **INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS**
11. **TEXTBOOKS AND OTHER REQUIRED MATERIALS**
12. **REFERENCES**
13. **METHODS OF INSTRUCTION AND EVALUATION**
14. **ATTENDANCE REQUIREMENTS**
15. **COURSE OUTLINE**