

J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: AUT 184 **Credits:** 4

Course Title: Engine Controls - OEM

Course Description:

Studies the operation, inspection, diagnosis, service, and repair of the engine management system. Focuses on the operation and testing of internal combustion, engine and fuel management systems emphasizing ignition, fuel delivery, and computer inputs. Develops diagnostic strategies and the use of tools and equipment related to repairing drivability and/or engine performance issues. This course is intended for students in an original equipment manufacturer (OEM) training program. Part I of II. Lecture 2 hours. Laboratory 8 hours. Total 10 hours per week. 4 credits

General Course Purpose:

This course is intended for students in an OEM training program to provide specific instruction and hands-on practice of the OEM's vehicle and engine platforms. The course focuses on the tools and equipment, strategies for diagnosis, and repair of OEM-specific powertrains.

Course Prerequisites and Co-requisites:

- **Prerequisite:**
 - Acceptance and good standing in the original equipment manufacturer (OEM) training program.
 - AUT 181 Electrical I - OEM or program head approval.
- **Co-Requisite:**
 - None

Student Learning Outcomes:

Upon completing the course, the student will be able to

- Develop combustion triangulation and basic no-start testing processes
- Develop diagnostic strategies for engine computer functions (input, output, processing, diagnostics)
- Develop diagnostic strategies related to fuel and ignition systems, perform tests and determine appropriate actions
- Achieve original equipment OEM-level certification as an Engine Controls Specialist

Major Topics to Be Included:

- Engine sealing tests and action determination
- Read, record, and diagnose DTCs with original equipment OEM scan tool
- Capture, analyze and graph data necessary for diagnosis
- Diagnose fuel and/or induction failure
- Diagnose ignition-related failure
- Other technologies as required by the OEM's specifications

Effective Date/Updated: January 1, 2023