

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: AUT 280 **Credits:** 4

Course Title: Engine Mechanical - OEM

Course Description:

Studies gasoline and/or diesel engine construction, operation, diagnosis, and service and repair. Introduces diagnostic procedures emphasizing how to remove, disassemble, measure, reassemble and reinstall an engine assembly. Develops advanced-level diagnostic strategies to locate and repair engine mechanical related faults, including the use of a pressure transducer. This course is intended for students in an original equipment manufacturer (OEM) training program. 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 engine platforms with a focus on developing appropriate diagnostic strategies following OEM-specific repair procedures. The course focuses on the tools and equipment, strategies for inspection, service, and repair of OEM-specific vehicles.

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

- Achieve credentials as an OEM-certified Engine Specialist
- Prepare to sit for the A1 – Engine Mechanical ASE examination
- Develop strategies to identify and diagnose engine mechanical failures
- Remove/reinstall engine assembly and perform final checks for delivery to the customer
- Disassemble, correctly measure, and reassemble engine assembly

Major Topics to Be Included:

- Internal combustion engine construction, function, service and repair
- Engine mechanical condition diagnosis and repair
- Valve train construction, function, service, repair and diagnosis
- Cylinder block and lower end construction, function, service, repair and diagnosis
- Lubrication and cooling systems service, diagnosis and repair
- Other technologies as required by the OEM's specifications

Effective Date/Updated: January 1, 2023