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

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