Course Information Form (CIF)

Course Code: AFM 132

Course Title: Internal Combustion Engines

Department: Applied Sciences and Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 47.0604
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 2-4-4
Credit Hour Distribution:

Lecture: 2	Lab: 4	Clinical: 0	**Total: 4**

General Course Information

Catalog Description

Application of theory and laboratory situations pertaining to present day power plants; engine operation, construction, disassembly, precision measuring, machining, and reassembly. Students who successfully complete this course may receive credit for Engine Diagnosis and Repair from Ford Motor Company.

General Course Objectives

Students will learn the basics of the internal combustion engine including parts identification, inspection, and measuring techniques. Emphasis will be on basic engine rebuilding skills.

Minimum Placement Levels

English	Reading	Math
Placement into ENG 098	Placement into CCS 098	Placement into MAT 060

Prerequisites

Credit in AFM 257

Methods of Evaluation

The minimum number of evaluation methods include: 5 quizzes, 20 lab exercises, 4 web courses, and 1 lab practical exam.

Instructional Materials and Additional Supplies

- Global Fundamentals, Engine Operation, Ford Motor Company
- Automotive Technology, Erjavec, Thompson Delmar Learning

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Introduction to Engine Overhauling Tools and Techniques	1. Administer correct usage of special tools and techniques involved with refurbishing/reusing engine components.	2	1	0
Internal Combustion Engine Theory	1. Demonstrate an understanding of how the internal combustion operates based upon engine design.	8	0	0
Precision Measuring Equipment	1. Demonstrate proper measuring techniques using both US and metric measuring devices.	2	3	0
Proper Tool Usage	1. Demonstrate the proper use of hand tools and Ford special service tools.	1	4	0
Engine Condition Diagnosis	1. Demonstrate proper base engine diagnostic procedures using compression tests and cylinder leakage tests.	2	4	0
Engine Cooling System	1. Demonstrate knowledge of the engine cooling system operation. 2. Demonstrate knowledge of engine cooling system diagnosis. 3. Demonstrate knowledge of engine cooling system repair.	2	4	0
Engine Lubrication System	1. Demonstrate knowledge of the engine oil system operation. 2. Demonstrate knowledge of engine oil system diagnosis. 3. Demonstrate knowledge of engine oil system repair.	2	4	0
Engine Disassembly and Reassembly	1. Demonstrate how to properly disassemble current model Ford engines. 2. Determine the integrity of the internal engine parts using precision measuring equipment. 3. Reassemble the engine using the proper techniques to set the valve timing and fastener torque.	6	30	0
Cylinder Head	1. Demonstrate knowledge of the proper disassembly of a cylinder head. 2. Determine the integrity of the parts using precision measuring equipment. 3. Demonstrate knowledge of performing valve and valve seat machining.	5	10	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	60	0