ME 381 – Internal Combustion Engines (1)

Hour: Lecture: 2 Hrs. Tutorial: 2 Hrs. Credit: 3.
Coordinator: Salem Haggag

Text Book:

- Davis N. Dales, "Automotive Electronics and Engine" Frank J. THIESSEN, Performance 1995

Reference Books:

- M.L MATHUR & R.P. SHARMA " A Course in ICE", 1988
- H.B.KESWANI " Internal Combustion Engines", 1988

Specific course information

a. Study of theoretical and operating cycles, construction aspects of engines, combustion in the spark ignition engines, carburetor, injection systems, ignition systems, combustion chamber design, lubricating systems, cooling systems, and lubrication engine performance analysis. Natural gas and hydrogen engines. Hands-on laboratory work is an integral part of this course.
b. Prerequisite: ME 232
c. Designation: Required

Specific goals for the course:

- An ability to apply knowledge of mathematics, science, and engineering.
- Identify, formulate, and solve engineering problems. Make appropriate and necessary assumptions. Suggest and evaluate new approaches.
- Ability to visualize the impact of the Mechanical technological development on the environment.

Course instruction outcomes:

- The students will be able to visualize the different type of S.I.E.and their components.
- The students will be familiar with Basic knowledge of fundamentals, constructions engine systems and operation.

Student outcomes:

A, E

Topics Covered:

- Modern Development in SIE – Classification of ICE – Heat Balance

- Air Standard Cycles Applied to ICE
- Analysis of Actual Cycle
- Combustion in SIE
- Carburetor Performance
- Carburetor Calculations and Fuel Injection
- Ignition System
- Engine Friction
- Engine Lubrication
- Engine Cooling
- Engine Test
- Engine Performance

Course / credit hours	Math & Basic Sciences	Engineering Topics	General Education
I.C.E (1)(ME381)/3		3	