

EML 5107**OUTLINE OF INTERNAL COMBUSTION ENGINES**

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Kopp Engineering

This course is mostly on the practical side for the applications of thermodynamics, chemistry, kinematics and dynamics of machinery, electronics, and fluid mechanics. This course is also a combination of theories, principles, designs, maintenance and overhaul of engines, so that it is closely related with our daily lives. Students with good background on the related courses and with some experience in the maintenance of automobiles may have advantages in taking this course. The following chapters will be covered in this course:

1. Introduction of Engines
Theoretical Cycles
Real Cycles
2. Fuels and Combustion
Chemical Equilibrium
Chemical Kinetics
3. Ignition
4. Fuel Systems
5. Dynamics of Machinery
Flywheels
Balance of Reciprocating mechanism
6. Emission control of exhaust pollutants
7. Accessories
8. Maintenance and Overhaul

Computer Usage: Yes (KIVA-3)

Textbook:

Richard Stone "Introduction to International Combustion Engines"
2nd Edition, 1994

Reference:

J. B. Heywood "Internal Combustion Engin Fundamentals",
McGraw-Hill, 1988

Grade Systems:

Homework 10%
2 Tests (6th & 12th weeks) 40%
Final Examinations 50%