Course Code	ME207
Course Title	Applied Thermodynamics I
No. of Credits	3
Pre-requisites	None
Compulsory / Optional	Compulsory for mechanical engineering

Aim(s): This is the first part of the applied thermodynamics course designed to provide a background of fundamental principles of internal combustion engines, air-compressors, combustion process, and gas turbines. The sections covers here are not restricted to fundamentals; they also discuss the history, developments and applications. This covers first and second law applications in various sections.

Intended Learning Outcomes :

At the end of the course the student should be able to:

- 1. apply energy balance and find thermodynamic properties of a thermal system and explain thermodynamics laws.
- 2. analyze of 2-stroke/4-stroke spark ignition engine cycle, 2-stroke/4-stroke compression ignition engine cycle, gas turbine cycle and air compressor cycle.
- 3. establish stoichiometric equation for combustion process of different fuels.
- 4. work in a groups, take experiment readings, analyze and writing reports.

Time Allocation (Hours) : Lectures 35, PBL 9, Assignments 10, Tutorial 0

Course content / Course description :

- Review of Fundamentals of Thermodynamics
- Fundamentals of internal combustion engines
- Reciprocating air compressors and expanders
- Combustion process
- Gas turbine Cycle

Recommended Texts (if any) :

- A text book "Course book thermodynamics I and II" prepared by Dr. Primal Fernando, university of Peradeniya, Sri Lanka is used as the main text book for this course.
- Class room notes and course book printed chapters are provided.
- Additional books are recommended

Assessment	Percentage Mark
Labs	10
Assignment(s) / Quiz (s) / Report (s)	20
Mid semester evaluation	20
Final Exam	50