UNIVERSITY of NICOSIA

Course Syllabus

Course Code	Course Title	ECTS Credits
MENG-430	Internal Combustion Engines	6
Prerequisites	**Department**	**Semester**
MENG-252, MENG-290	Engineering	Fall, Spring
Type of Course	**Field**	**Language of Instruction**
Required	Engineering	English
Level of Course	**Lecturer(s)**	**Year of Study**
1st Cycle	Dr Elias Yfantis	4th
Mode of Delivery	**Work Placement**	**Corequisites**
Face-to-Face	N/A	None

Course Objectives:

The main objectives of the course are to:

- Understand the Principles of Internal Combustion Engines design and operation
- Study the performance and emission characteristics of various types and configurations of internal combustion engines
- Analyze the parameters that affect the internal combustion engines operational behavior
- Perform the energy analysis of the internal combustion engines

Learning Outcomes:

After completion of the course students are expected to be able to:

- Describe internal combustion engine components and auxiliary systems and understand their functioning.
- Analyze the engines performance and environmental impact.
- Perform the energy analysis of the engines

Course Content:

- Introduction to Internal Combustion Engines
- Thermodynamic principles
- Combustion and fuels
- Spark ignition engines
- Compression ignition engines
- Induction and exhaust processes

- Two-stroke/Four stroke engines
- Turbocharging and supercharging
- Mechanical design considerations
- Heat transfer in Internal Combustion Engines
- Case studies

Learning Activities and Teaching Methods:

Lectures, interactive teaching/learning, case studies, laboratory exercises. The course format is 3 h lectures and 1 h design tutorial session per week.

Assessment Methods:

Homework, lab reports, midterm exam, final exam.

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Introduction to Internal Combustion Engines	Richard Stone	Macmillan	2012	0768004950

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Thermodynamics: An Engineering Approach 7th Edition	Y.Cengel and M. Boyles	McGraw Hill	2010	007352932X