

FACULTY OF **ENGINEERING**

DEGREE COURSE: **INDUSTRIAL ENGINEERING BS**

SUBJECT: INTERNAL COMBUSTION ENGINES

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OBJECTIVES

The course is aimed at:

- 1) providing basic knowledge needed to approach the study of internal combustion engines
- 2) explaining the operating principles and the characteristics of the main components of internal combustion engines

CONTENTS

Characteristics of internal combustion engines
Thermodynamic cycles
Charge exchange processes in four-stroke engines
Charge exchange processes in two-stroke engines
Inlet and exhaust systems
Supercharging
Engine fuels
Spark-ignition engines fuel feed systems
Compression-ignition engines fuel feed systems
Charge motion within the cylinder
Combustion in spark-ignition engines
Combustion in compression-ignition engines
Pollutant formation and control

LEARNING OUTCOMES

At the end of the course, students will:

- have acquired the basic skills needed to deal with the study of internal combustion engines;
- have learned the operating principles and the characteristics of the main components of internal combustion engines.

ASSESSMENT

Written exam: multiple choice and open questions

RECOMMENDED TEXTBOOKS

- Educational material provided by the teacher
 - Heywood J. B. , *Internal combustion engine fundamentals*, McGraw-Hill, 1989
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