

Centre	University College of Engineering of Vitoria-Gasteiz
Name of subject	26054 – Heat Engines
Qualification	Degree in Mechanical Engineering
Type	Elective
Credits	6 ECTS
Year	4
Term(s)	2nd
Department	Thermal Machines and Heat Engines
Language	Spanish

Outcomes / Objectives

Alternative internal combustion engines. Reaction engines. Theoretical and practical study and practical analysis of engines

Syllabus

Introduction. Revision of thermodynamic concepts. Combustion in a spark-ignition engine and in a homogeneous charge compression engine. Classification of engines – 2-stroke and 4-stroke engines. Mixture formation. Analysis of admission. Load changes. Analysis of gas expulsion. Heat and mechanical losses. Practical study of the real engine versus the theoretical engine. Similarities: criteria. Concept of similarity and its study using modern methods. The engine and the environment: noise and pollutant emissions. The engine and the environment: present-day techniques in the engine industry and their influence on R&D&I in enterprises. Characteristic curve, testing and performance of internal combustion piston engines. Quantitative analysis of several practical engines.

Methodology

Teaching Method

Face-to-Face Teaching Hours

Lectures	Seminars	Classroom practice	Lab. practice	Computer sessions	Clinical practice	Workshops	Industrial workshops	Field practice
36		9	15					

Student Hours of Non Face-To-Face Activities

Lectures	Seminars	Classroom practice	Lab. practice	Computer sessions	Clinical practice	Workshops	Industrial workshops	Field practice
54		13,5	22,5					

Bibliography

Basic Bibliography

- Motores alternativos de combustión interna Muñoz, Moreno y Morea. Prensa Universitaria de Zaragoza
- Problemas resueltos de Motores Térmicos y Turbomáquinas Térmicas. Muñoz, 2ª ed.
- Motores Alternativos. Payri, Martín Universidad Politécnica de Valencia

Magazines

- Motor Magazine