

## SUBJECT TEACHING GUIDE

### G754 - Thermal Machines and Motors

#### Degree in Mechanical Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Mechanical Engineering			Type and Year	Compulsory. Year 3
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Machines and Thermal Motors Module: Further Mechanical Technology				
Course unit title and code	G754 - Thermal Machines and Motors				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. INGENIERIA ELECTRICA Y ENERGETICA				
Name of lecturer	SEVERIANO FIDENCIO PEREZ REMESAL				
E-mail	severiano.perez@unican.es				
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 3. DESPACHO PROFESOR (S3026)				
Other lecturers	MANUEL ODRIOZOLA RODRIGUEZ JORGE TOMAS CUELI LOPEZ				

### 3.1 LEARNING OUTCOMES

- Knowledge of machines and real heat engines. Foundations and principles of operation of reciprocating or rotary machines, with their actual development cycles, behavior, and laboratory tests (alternative M.).

### 4. OBJECTIVES

To provide students with basic knowledge about Heat Engines must possess a graduate in Mechanical Engineering.

6. COURSE ORGANIZATION	
CONTENTS	
1	Alternative Heat Engines (Key characteristics and parameters. Cycles engines work. Cycle air. Renewal load 4 T and 2T engines. Fuels. Requirements MEP mixing engines. Characteristic curves. Test engines)
2	Steam turbines (Key features and components. Turbines Action. Reaction turbines.)
3	Gas turbines (Key features and components. Ideal and real cycles. Combined Cycle)
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4	Other Heat Engines (rotary motors. Reactors)

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Evaluation method Description examination 1	Written exam	No	Yes	45,00
Evaluation method Description examination 2	Written exam	Yes	Yes	45,00
Laboratory practice evaluation	Others	No	No	10,00
<b>TOTAL</b>				<b>100,00</b>
<b>Observations</b>				
<p>It is expected that in the event that the health and / or educational authorities do not allow the theoretical-practical examination of the subject to be carried out in person, this will be done through the Moodle platform. To do this, students must have a computer and internet connection on the day of the exam. Not parties to the September session are saved.</p> <p>In none of the tests using programmable calculators or electronic devices that establish communication is allowed.</p>				
<b>Observations for part-time students</b>				
Part-time students may pass the subject in the ordinary and extraordinary exams.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
<b>BASIC</b>
<ul style="list-style-type: none"> <li>- "Turbomáquinas Térmicas". C. Mataix, Dossat, 1990.</li> <li>- "Termodinámica Técnica y Máquinas Térmicas". C. Mataix</li> <li>- "Termodinámica Lógica y Motores Térmicos". J. Agüera</li> <li>- "Motores de combustión interna alternativos". Muñoz-Payri. U.P. Valencia, 2000</li> </ul>