

SUBJECT TEACHING GUIDE

G878 - Power Stations and Renewable Energy

Degree in Electrical Engineering

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Degree in Electrical Engineering			Type and Year	Compulsory. Year 4
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Further Generation, Transport and Distribution of Electric Energy Module: Further Electrical Technology				
Course unit title and code	G878 - Power Stations and Renewable Energy				
Number of ECTS credits allocated	6	Term	Semester based (1)		
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	SERGIO BUSTAMANTE SANCHEZ				

3.1 LEARNING OUTCOMES
- The student must know the principles of operation of the main types of plants generating electricity as well as its main components. It will be able to understand and develop engineering projects related to power generation.
- The student must acquire knowledge on the implementation of the MSSS in power generation, small hydro power and biomass. It will be able to develop and modify engineering projects related to power generation.

4. OBJECTIVES
Know the different types of power generation of electricity.
Understanding the mechanisms of transmission of energy between systems.
Introduce students in renewable energy, focusing on biomass energy and minihydraulic.

6. SUBJECT PROGRAM	
CONTENTS	
1	hydroelectric plants and pumping
2	thermal power stations. Coal and gas plants. Cogeneration. combined cycle.
3	nuclear power stations
4	Introduction to renewable energies.

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
For the presentation of the works will be carried out throughout the course. Students who do not pass the subject by continuous evaluation must pass it in the ordinary and extraordinary calls for the subject. Remote evaluation of the work, practical labo	Work	No	Yes	40,00
The follow-up exercises will consist of short tests that will be carried out in class throughout the course.	Others	No	Yes	60,00
TOTAL				100,00
Observations				
For the presentation of the works will be carried out throughout the course. Students who do not pass the subject by continuous evaluation must pass it in the ordinary and extraordinary calls for the subject. The remote evaluation of the work, practical laboratory exercises and written tests is foreseen, in the case of a new health alert by COVID-19 that makes it impossible to carry out the evaluation in person				
Observations for part-time students				
Part-time students must pass the subject by delivering and presenting the corresponding work and recovering the part of follow-up exercises in the ordinary and extraordinary calls.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Turbomáquinas térmicas. Claudio Mataix. ICAI
Turbomáquina hidráulicas. Claudio Mataix: ICAI
Plantas de valorización energética de la biomasa. José María Sala Lizarraga, Luis María López González. Ochoa, D.L. 2002
La energía del oleaje : una guía técnica para su aprovechamiento / Rodrigo Carballo, Néstor Areán, Iván López, Gregorio Iglesias. Madrid : Paraninfo, [2020]©2020. ISBN: 978-84-283-4461-6