



## 1. General information

Course: PLANNING AND WORKING OF POWER STATIONS

Type: ELECTIVE

Degree: 355 - UNDERGRADUATE DEGREE PROGRAMME IN ELECTRICAL ENGINEERING (AB)

Center: 605 - SCHOOL OF INDUSTRIAL ENGINEERS. AB

Year: Sin asignar

Main language: Spanish

Use of additional languages:

Web site:

Code: 56424

ECTS credits: 6

Academic year: 2023-24

Group(s): 10

Duration: C2

Second language: English

English Friendly: Y

Bilingual: N

Lecturer: SERGIO MARTIN MARTINEZ - Group(s): 10				
Building/Office	Department	Phone number	Email	Office hours
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Lecturer: ABEL SANCARLOS GONZÁLEZ - Group(s): 10				
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## 2. Pre-Requisites

Not established

## 3. Justification in the curriculum, relation to other subjects and to the profession

Not established

## 4. Degree competences achieved in this course

## Course competences

Code	Description
A03	To have the capability to gather and interpret relevant data (normally within the area of study) to make judgements that include a reflection on themes of a social, scientific or ethical nature.
A04	To be able to transmit information, ideas, problems and solutions to both a specialist and non-specialist audience.
A10	Ability to produce and develop projects in the field of Electrical Engineering aimed at, and in accordance with the knowledge acquired as established in section 5 of Order CIN/351/2009, the construction, remodelling, repair, conservation, demolition, manufacturing, installation, assembly or use of: structures, mechanical equipment, power installations, electrical and electronic installations, industrial plants and installations and processes of manufacture and automatization.
A13	Ability to take the initiative to solve problems, take decisions, creativity, critical reasoning and ability to communicate and transmit knowledge, skills and abilities in Electrical Engineering.
A15	Ability to work to specifications and comply with obligatory rules and regulations.
F09	Application of knowledge to the planning and exploitation of electrical power plants, especially those based on renewable energy sources.

## 5. Objectives or Learning Outcomes

## Course learning outcomes

Description

Design power stations, especially those based on renewable energy

Analyze the viability of projects and how they are carried out

## 6. Units / Contents

Unit 1:

Unit 2:

Unit 3:

Unit 4:

Unit 5:

## 7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	A03 A04 A10 A13 A15 F09	1.08	27	Y	N	
Computer room practice [ON-SITE]	Project/Problem Based Learning (PBL)	A10 A13 A15 F09	0.52	13	Y	Y	
Problem solving and/or case studies [ON-SITE]	Case Studies	A13 A15	0.5	12.5	Y	N	
Progress test [ON-SITE]	Assessment tests	A03 A04 A10 A13 A15 F09	0.3	7.5	Y	Y	
Writing of reports or projects [OFF-SITE]	Project/Problem Based Learning (PBL)	A10 A13 A15 F09	3.6	90	Y	N	
<b>Total:</b>			<b>6</b>	<b>150</b>			
<b>Total credits of in-class work: 2.4</b>			<b>Total class time hours: 60</b>				
<b>Total credits of out of class work: 3.6</b>			<b>Total hours of out of class work: 90</b>				

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System			
Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Laboratory sessions	40.00%	40.00%	
Theoretical exam	60.00%	60.00%	
<b>Total:</b>	<b>100.00%</b>	<b>100.00%</b>	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
<b>Unit 1 (de 5):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	8
Computer room practice [PRESENCIAL][Project/Problem Based Learning (PBL)]	2
Problem solving and/or case studies [PRESENCIAL][Case Studies]	3
Progress test [PRESENCIAL][Assessment tests]	2.5
Writing of reports or projects [AUTÓNOMA][Project/Problem Based Learning (PBL)]	20
<b>Unit 2 (de 5):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	8
Computer room practice [PRESENCIAL][Project/Problem Based Learning (PBL)]	7
Problem solving and/or case studies [PRESENCIAL][Case Studies]	4
Progress test [PRESENCIAL][Assessment tests]	2
Writing of reports or projects [AUTÓNOMA][Project/Problem Based Learning (PBL)]	30
<b>Unit 3 (de 5):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Computer room practice [PRESENCIAL][Project/Problem Based Learning (PBL)]	3
Problem solving and/or case studies [PRESENCIAL][Case Studies]	2
Progress test [PRESENCIAL][Assessment tests]	1.5
Writing of reports or projects [AUTÓNOMA][Project/Problem Based Learning (PBL)]	20
<b>Unit 4 (de 5):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	6
Computer room practice [PRESENCIAL][Project/Problem Based Learning (PBL)]	1
Problem solving and/or case studies [PRESENCIAL][Case Studies]	3.5
Progress test [PRESENCIAL][Assessment tests]	1.5
Writing of reports or projects [AUTÓNOMA][Project/Problem Based Learning (PBL)]	20
<b>Global activity</b>	
<b>Activities</b>	<b>hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	27
Computer room practice [PRESENCIAL][Project/Problem Based Learning (PBL)]	13
Problem solving and/or case studies [PRESENCIAL][Case Studies]	12.5
Progress test [PRESENCIAL][Assessment tests]	7.5
Writing of reports or projects [AUTÓNOMA][Project/Problem Based Learning (PBL)]	90
<b>Total horas: 150</b>	

## 10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
	Apuntes de las asignatura					
Antonio Gómez Expósito	Análisis y operación de sistemas de energía eléctrica	McGraw-Hill			2002	
J.L. Rodríguez, J.C. Burgos, S. Arnalte Gómez	Sistemas eólicos de producción de energía eléctrica			84-7202-139-1	2003	
Manuel-Alonso Castro Gil, Roque Calero Pérez, José Antonio Carta González, Antonio Colmenar Santos.	Centrales de energías renovables : generación eléctrica con energías renovables	UNED Pearson Educación		978-84-8322-600-1	2009	
FERNANDEZ SALGADO, JOSE M <sup>a</sup>	COMPENDIO DE ENERGIA SOLAR: FOTOVOLTAICA, TERMICA Y TERMoelectrica			9788484764007	2010	