

**1. General information****Course:** PLANNING AND WORKING OF POWER STATIONS**Code:** 56424**Type:** ELECTIVE**ECTS credits:** 6**Degree:** 413 - UNDERGRADUATE DEGREE PROGRAMME IN ELECTRICAL ENGINEERING**Academic year:** 2022-23**Center:** 605 - SCHOOL OF INDUSTRIAL ENGINEERS. AB**Group(s):** 10**Year:** 4**Duration:** C2**Main language:** Spanish**Second language:** English**Use of additional languages:****English Friendly:** Y**Web site:****Bilingual:** N

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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
CB01	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is appropriate to a level based on advanced course books, and includes updated and cutting-edge aspects of their field of knowledge.
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
CB05	Have developed the necessary learning abilities to carry on studying autonomously
CEO08	Applied knowledge of the planning and operation of power plants, especially those based on renewable energy sources.
CG01	Ability to draft, sign and develop projects in the field of Industrial Engineering, in accordance with the knowledge acquired under the provisions of Order CIN/351/2009, for the construction, reform, repair, conservation, demolition, manufacture, installation, assembly or operation of: structures, mechanical equipment, energy installations, electrical and electronic installations, industrial installations and plants, and manufacturing and automation processes.
CG02	Ability to manage activities related to engineering projects in the field of industrial engineering.
CG04	Ability to solve problems with initiative, decision-making, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of industrial engineering.
CG06	Ability to handle specifications, regulations and mandatory standards.
CG07	Ability to analyse and assess the social and environmental impact of technical solutions.
CT02	Knowledge and application of information and communication technology.
CT03	Ability to communicate correctly in both spoken and written form.

**5. Objectives or Learning Outcomes****Course learning outcomes**

Description

Design and calculation of basic installations and infrastructures of power plants and particularly those based on renewable energy sources.

Design of power plants, particularly those based on renewable energies.

Analysis of the feasibility of projects and processing of such projects.

**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		1	25	Y	N	
Computer room practice [ON-SITE]	Practical or hands-on activities		0.6	15	Y	Y	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises		0.6	15	Y	N	
Formative Assessment [ON-SITE]	Assessment tests		0.2	5	Y	Y	
Writing of reports or projects [OFF-SITE]	Project/Problem Based Learning (PBL)		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
Theoretical exam	60.00%	60.00%	
Laboratory sessions	40.00%	40.00%	
<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
Class Attendance (theory) [PRESENCIAL][Lectures]	25
Computer room practice [PRESENCIAL][Practical or hands-on activities]	15
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	15
Formative Assessment [PRESENCIAL][Assessment tests]	5
Writing of reports or projects [AUTÓNOMA][Project/Problem Based Learning (PBL)]	90
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	25
Computer room practice [PRESENCIAL][Practical or hands-on activities]	15
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	15
Formative Assessment [PRESENCIAL][Assessment tests]	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	Cítv	ISBN	Year	Description
Antonio Gómez Expósito	Apuntes de las asignatura 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	