

**1. General information****Course:** BIOMASS ENERGY UTILIZATION**Type:** ELECTIVE**Degree:** 357 - UNDERGRADUATE DEGREE PROGRAMME IN ELECTRICAL ENGINEERING (TO)**Center:** 303 - E.DE INGENIERÍA INDUSTRIAL Y AEROSPOACIAL DE TOLEDO**Year:** Sin asignar**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 56450**ECTS credits:** 6**Academic year:** 2023-24**Group(s):** 40**Duration:** First semester**Second language:** English**English Friendly:** Y**Bilingual:** N**Lecturer:** MARIA REYES GARCIA CONTRERAS - Group(s): 40

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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
A02	To know how to apply knowledge to work or vocation in a professional manner and possess the competences that are usually demonstrated by the formulation and defence of arguments and the resolution of problems in the field of study.
A04	To be able to transmit information, ideas, problems and solutions to both a specialist and non-specialist audience.
A05	To have developed the learning skills necessary to undertake subsequent studies with a greater degree of autonomy.
A08	Appropriate level of oral and written communication.
A12	Knowledge of basic materials and technologies that assist the learning of new methods and theories and enable versatility to adapt to new situations.
H03	Knowledge of the systems of exploitation of biomass energy

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

Description

**Additional outcomes****6. Units / Contents****Unit 1:**

Unit 1.1

Unit 1.2

Unit 1.3

**Unit 2:**

Unit 2.1

Unit 2.2

**Unit 3:**

Unit 3.1

**Unit 4:**

Unit 4.1

Unit 4.2

**Unit 5:**

Unit 5.1

**Unit 6:**

Unit 6.1

**7. Activities, Units/Modules and Methodology**

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Other on-site activities [ON-SITE]	Lectures		0.04	1	N	-	
Class Attendance (theory) [ON-SITE]	Lectures		0.86	21.5	N	-	
Group tutoring sessions [ON-SITE]	Combination of methods		0.6	15	N	-	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises		0.3	7.5	N	-	
Laboratory practice or sessions [ON-SITE]			0.3	7.5	Y	N	
Project or Topic Presentations [ON-SITE]	Assessment tests		0.16	4	Y	N	
Progress test [ON-SITE]	Assessment tests		0.06	1.5	Y	N	
Final test [ON-SITE]	Assessment tests		0.08	2	Y	N	
Writing of reports or projects [OFF-SITE]	Group Work		0.84	21	Y	N	
Study and Exam Preparation [OFF-SITE]	Self-study		2.76	69	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
Practicum and practical activities reports assessment	0.00%	0.00%	
Theoretical papers assessment	0.00%	0.00%	
Oral presentations assessment	0.00%	0.00%	
Progress Tests	0.00%	0.00%	
Final test	0.00%	100.00%	
Assessment of active participation	0.00%	0.00%	
<b>Total:</b>	<b>0.00%</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	
<b>Hours</b>	<b>hours</b>
Other on-site activities [PRESENCIAL][Lectures]	1
Laboratory practice or sessions [PRESENCIAL][L]	5.5
Progress test [PRESENCIAL][Assessment tests]	1.5
Final test [PRESENCIAL][Assessment tests]	2
Writing of reports or projects [AUTÓNOMA][Group Work]	9
Study and Exam Preparation [AUTÓNOMA][Self-study]	7.5
<b>Unit 1 (de 6):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	2.5
Group tutoring sessions [PRESENCIAL][Combination of methods]	1.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	6
<b>Unit 2 (de 6):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	4.5
Group tutoring sessions [PRESENCIAL][Combination of methods]	3.5
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Project or Topic Presentations [PRESENCIAL][Assessment tests]	2
Writing of reports or projects [AUTÓNOMA][Group Work]	4.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	13.5
<b>Unit 3 (de 6):</b>	
<b>Activities</b>	<b>Hours</b>
Class Attendance (theory) [PRESENCIAL][Lectures]	3.5
Group tutoring sessions [PRESENCIAL][Combination of methods]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Study and Exam Preparation [AUTÓNOMA][Self-study]	10.5
<b>Unit 4 (de 6):</b>	

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Group tutoring sessions [PRESENCIAL][Combination of methods]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	3.5
Laboratory practice or sessions [PRESENCIAL][]	2
Writing of reports or projects [AUTÓNOMA][Group Work]	3
Study and Exam Preparation [AUTÓNOMA][Self-study]	15
<b>Unit 5 (de 6):</b>	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	3.5
Group tutoring sessions [PRESENCIAL][Combination of methods]	2.5
Project or Topic Presentations [PRESENCIAL][Assessment tests]	2
Writing of reports or projects [AUTÓNOMA][Group Work]	3
Study and Exam Preparation [AUTÓNOMA][Self-study]	9
<b>Unit 6 (de 6):</b>	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	3.5
Group tutoring sessions [PRESENCIAL][Combination of methods]	3.5
Writing of reports or projects [AUTÓNOMA][Group Work]	1.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	7.5
<b>Global activity</b>	
Activities	hours
Project or Topic Presentations [PRESENCIAL][Assessment tests]	4
Progress test [PRESENCIAL][Assessment tests]	1.5
Final test [PRESENCIAL][Assessment tests]	2
Writing of reports or projects [AUTÓNOMA][Group Work]	21
Other on-site activities [PRESENCIAL][Lectures]	1
Class Attendance (theory) [PRESENCIAL][Lectures]	21.5
Group tutoring sessions [PRESENCIAL][Combination of methods]	15
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	7.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	69
Laboratory practice or sessions [PRESENCIAL][]	7.5
<b>Total horas: 150</b>	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Carta González, J.A.; Calero Pérez, R.; Colmenar Santos, A.; Castro Gil, M.A.	Centrales de energías renovables. Generación eléctrica con energías renovables	Pearson - Prentice Hall		978-84-8322-600-1	2009	
Fernández Salgado, J.M.	Tecnologías de las energías renovables	AMV Ediciones		978-84-96709-14-0	2009	
González Velasco, J.	Energías renovables	Reverté		978-84-291-7912-5	2009	