

**1. General information****Course:** MECHANISM AND STRUCTURE THEORY**Code:** 56403**Type:** CORE COURSE**ECTS credits:** 6**Degree:** 356 - UNDERGRADUATE DEGREE PROGRAMME IN ELECTRICAL ENGINEERING (CR)**Academic year:** 2021-22**Center:** 602 - E.T.S. INDUSTRIAL ENGINEERING OF C. REAL**Group(s):** 20**Year:** 2**Duration:** C2**Main language:** Spanish**Second language:** English**Use of additional languages:****English Friendly:** Y**Web site:****Bilingual:** N**Lecturer:** JUAN LUIS MARTINEZ VICENTE - Group(s): 20

Building/Office	Department	Phone number	Email	Office hours
Edificio Politécnico / 2-A04	MECÁNICA ADA. E ING. PROYECTOS	Vía TEAMS	juanluis.martinez@uclm.es	

Lecturer: ANGEL LUIS MORALES ROBREDO - Group(s): 20

Building/Office	Department	Phone number	Email	Office hours
Politécnico / 2-A12	MECÁNICA ADA. E ING. PROYECTOS	926051995	angelluis.morales@uclm.es	

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.
A07	Knowledge of Information Technology and Communication (ITC).
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.
C07	Knowledge of the principles of the theory of machinery and mechanisms.
C08	Knowledge and use of the principles of the resistance of materials.
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

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 1.4

Unit 1.5

Unit 2:

Unit 2.1

Unit 2.2

Unit 2.3

Unit 2.4

Unit 3:

Unit 3.1

Unit 3.2

Unit 3.3

Unit 3.4

Unit 3.5

Unit 4:

Unit 4.1

Unit 4.2

Unit 4.3

Unit 5:

Unit 5.1

Unit 5.2

Unit 5.3

Unit 5.4

Unit 5.5

Unit 6:

Unit 6.1

Unit 6.2

Unit 6.3

Unit 6.4

Unit 7:

Unit 7.1

Unit 7.2

Unit 7.3

Unit 7.4

Unit 8:

Unit 8.1

Unit 8.2

Unit 8.3

Unit 8.4

Unit 9:

Unit 9.1

Unit 9.2

Unit 9.3

Unit 9.4

Unit 10:

Unit 10.1

Unit 10.2

Unit 10.3

Unit 10.4

Unit 10.5

Unit 10.6

Unit 10.7

Unit 10.8

Unit 10.9

Unit 10.10

Unit 10.11

Unit 10.12

Unit 10.13

Unit 10.14

Unit 11:

Unit 11.1

Unit 11.2

Unit 11.3

Unit 11.4

Unit 12:

Unit 12.1

Unit 12.2

Unit 12.3

Unit 12.4

Unit 12.5

Unit 12.6

Unit 12.7

Unit 12.8

Unit 12.9

Unit 12.10

Unit 12.11

Unit 13:

Unit 13.2

Unit 13.3

Unit 13.4

Unit 13.5

Unit 13.6

Unit 14:

Unit 14.1

Unit 14.2

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 A07 A08 A12 C07 C08 CB01 CB02 CB03 CB04 CB05	0.88	22	N	-	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	A03 A07 A08 A12 C07 C08 CB01 CB02 CB03 CB04 CB05	0.8	20	Y	N	
Computer room practice [ON-SITE]	Practical or hands-on activities	A03 A07 A08 A12 C07 C08 CB01 CB02 CB03 CB04 CB05	0.32	8	Y	Y	
Final test [ON-SITE]	Assessment tests	A03 A07 A08 A12 C07 C08 CB01 CB02 CB03 CB04 CB05	0.2	5	Y	Y	
Group tutoring sessions [ON-SITE]	Group Work	A03 A07 A08 A12 C07 C08 CB01 CB02 CB03 CB04 CB05	0.2	5	N	-	
Study and Exam Preparation [OFF-SITE]	Self-study	A03 A07 A08 A12 C07 C08 CB01 CB02 CB03 CB04 CB05	3.6	90	N	-	
Total:			6	150			
Total credits of in-class work: 2.4			Total class time hours: 60				
Total credits of out of class work: 3.6			Total hours of out of class work: 90				

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
Final test	70.00%	100.00%	
Assessment of problem solving and/or case studies	15.00%	0.00%	
Laboratory sessions	15.00%	0.00%	
Total:	100.00%	100.00%	

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
Computer room practice [PRESENCIAL][Practical or hands-on activities]	8
Final test [PRESENCIAL][Assessment tests]	5
Group tutoring sessions [PRESENCIAL][Group Work]	5
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Unit 1 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Unit 2 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Unit 3 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Unit 4 (de 14):	

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Unit 5 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Unit 6 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Unit 7 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Unit 8 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Unit 9 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Unit 10 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Unit 11 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Unit 12 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Unit 13 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Unit 14 (de 14):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Global activity	
Activities	hours
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	20
Computer room practice [PRESENCIAL][Practical or hands-on activities]	8
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Class Attendance (theory) [PRESENCIAL][Lectures]	22
Group tutoring sessions [PRESENCIAL][Group Work]	5
Final test [PRESENCIAL][Assessment tests]	5
Total horas: 150	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Beer, Ferdinand P.	Mecánica vectorial para ingenieros : Dinámica	McGraw-Hill,		978-1-4562-5526-8	2017	
Beer, Ferdinand P.	Mecánica vectorial para ingenieros : Estática	McGraw- Hill,		978-1-4562-5527-5	2017	
CEN (Comité Europeo de Normalización)	EUROCÓDIGO 3. Proyecto de estructuras de acero. Parte 1-1 : Reglas generales y reglas para edificación				1996	
Carril, R. D.	Mecánica, problemas explicados	Júcar				
Erdman, A. G.	Mechanism Design: Analysis and Synthesis, Vol. I	Prentice-Hall			1997	
Garrido García, José A.	Resistencia de materiales	Secretariado de Publicaciones e Intercambio Cie		84-7762-951-X	1999	
Hibbeler, R. C.	Ingeniería mecánica, estática	Prentice-Hall Hispanoamericana		968-880-601-3	1996	

Hibbeler, R. C.	Ingeniería mecánica: dinámica	Pearson Educación	978-607-442-560-4	2010
J.P. Den Hartog	Strength of Materials	Dover		1961
Mabie, H. H.	Mecanismos y Dinámica de Maquinaria	Limusa		1998
MacGuire, William	Matrix structural analysis	John Wiley & Sons	0-471-12918-6	2000
Mc Gill, D.J.	Mecánica para Ingeniería (Estática y Dinámica)	Grupo Editorial Iberoamericano		
Ministerio de Vivienda	Código Técnico de la Edificación			2006
Ortiz Berrocal, Luis	Resistencia de materiales	McGraw-Hill	84-7615-512-3	1990
Pintado, P.	Teoría de Máquinas	UCLM		1999
Pérez, V. M.	100 problemas de Mecánica	Alianza Editorial		
Shames, Irving H.	Mecánica para ingenieros : dinámica	Prentice Hall	84-8322-045-8	1999
Shames, Irving H.	Mecánica para ingenieros : estática	Prentice Hall	84-8322-044-X	2001
Timoshenko, Stephen (1878-1972)	Resistencia de materiales	Espasa-Calpe	84-239-6315-2 (t.1)	1980
Vázquez Fernández, Manuel	Resistencia de materiales	Noela	84-88012-05-5	1999
de Juana, J. M.	Mecánica, problemas de examen resueltos	Paraninfo		