UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course:	ENGINEERING GRAPHICS II	**Code:**	56309
Type:	CORE COURSE	**ECTS credits:**	6
Degree:	353 - UNDERGRADUATE DEGREE PROG. IN MECHANICAL ENGINEERING (CR)	**Academic year:**	2022-23
Center:	602 - E.T.S. INDUSTRIAL ENGINEERING OF C. REAL	**Group(s):**	20
Year:	2	**Duration:**	First semester
Main language:	Spanish	**Second language:**	English
Use of additional languages:	English (CAD software)	**English Friendly:**	Y
Web site:		**Bilingual:**	N

Lecturer: **JESUS MIGUEL CHACON MUÑOZ** - Group(s): **20**

Building/Office	Department	Phone number	Email	Office hours
Politécnico/2-A08	MECÁNICA ADA. E ING. PROYECTOS	926295486	jesusmiguel.chacon@uclm.es	

Lecturer: **FRANCISCO JAVIER SANCHEZ-REYES FERNANDEZ** - Group(s): **20**

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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
A01	To understand and have knowledge in an area of study that moves on from the general education attained at secondary level and usually found at a level that, while supported in advanced text books, also includes some aspects that include knowledge found at the cutting edge of the field of study.
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.
A07	Knowledge of Information Technology and Communication (ITC).
A12	Knowledge of basic materials and technologies that assist the learning of new methods and theories and enable versatility to adapt to new situations.
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 Mechanical Engineering.
A15	Ability to work to specifications and comply with obligatory rules and regulations.
B05	Spatial awareness and knowledge of graphical representation techniques, both through traditional geometrical measurements and descriptive geometry, as well as through the application of computer assisted design.
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
D01	Knowledge and ability to apply graphic engineering techniques.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Extend knowledge of standardization of tolerances

Manipulate and generate 3-D representations on a computer using 2-D input-output peripherals

To be able to use forms of complex designs, beyond natural quadrics

To know elements commonly used in the industry (threads, keys, gears, bearings¿) Know what they are, how they are used and their standardized representation.

Ability to choose, in specific cases, suitable instruments

To know how to interpret drawings, not only isolated elements, but also assembly drawings, distinguishing the functions of each element

6. Units / Contents

Unit 1: Standardized dimensioning
Unit 2: Engineering drawings of mechanical assemblies
Unit 3: Tolerancing and engineering fits
Unit 4: Surface finish
Unit 5: Fasteners
Unit 6: Machine elements
Unit 7: Introduction to CAD/CAE
Unit 8: CAD software. Surfaces and solids
Unit 9: Parametric solid modeling
Unit 10: Generating standard engineering drawings
Unit 11: Assemblies and standard parts libraries

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	A01 A15 B05 D01	0.6	15	N	-	
Class Attendance (practical) [ON-SITE]	Cooperative / Collaborative Learning	A01 A02 A13 B05 D01	1.04	26	N	-	
Class Attendance (practical) [ON-SITE]	Cooperative / Collaborative Learning	A07 A15 B05 D01	0.6	15	N	-	
Final test [ON-SITE]	Assessment tests	A01 A02 A07 A12 A13 A15 B05 CB01 CB02 CB03 CB04 CB05 D01	0.16	4	Y	Y	
Writing of reports or projects [OFF-SITE]	Group Work	A01 A02 A07 A12 A13 A15 B05 CB01 CB02 CB03 CB04 CB05 D01	1	25	Y	Y	
Writing of reports or projects [OFF-SITE]	Problem solving and exercises	A15 B05 D01	0.8	20	N	-	
Study and Exam Preparation [OFF-SITE]	Self-study	CB05	1.8	45	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
Test	67.00%	67.00%	N1
Assessment of problem solving and/or case studies	33.00%	33.00%	N2
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).

Evaluation criteria for the final exam:

Continuous assessment:

Minimum grades: N1>=4 AND N2>=4
Final grade (if both conditions are fulfilled) = (2N1+N2)/3

Non-continuous evaluation:

Minimum grades: N1>=4 AND N2>=4
Final grade (if both conditions are fulfilled) = (2N1+N2)/3

Specifications for the resit/retake exam:

Minimum grades: N1>=4 AND N2>=4
Final grade (if both conditions are fulfilled) = (2N1+N2)/3

Specifications for the second resit / retake exam:

Minimum grades: N1>=4 AND N2>=4
Final grade (if both conditions are fulfilled) = (2N1+N2)/3

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	hours
Final test [PRESENCIAL][Assessment tests]	4
Writing of reports or projects [AUTÓNOMA][Group Work]	25
Writing of reports or projects [AUTÓNOMA][Problem solving and exercises]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	45

Unit 1 (de 11): Standardized dimensioning	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	4
Unit 2 (de 11): Engineering drawings of mechanical assemblies	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	2
Unit 3 (de 11): Tolerancing and engineering fits	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	6
Unit 4 (de 11): Surface finish	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	1
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	2
Unit 5 (de 11): Fasteners	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	6
Unit 6 (de 11): Machine elements	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	6
Unit 7 (de 11): Introduction to CAD/CAE	
Activities	**Hours**
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	2
Unit 8 (de 11): CAD software. Surfaces and solids	
Activities	**Hours**
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	2
Unit 9 (de 11): Parametric solid modeling	
Activities	**Hours**
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	4
Unit 10 (de 11): Generating standard engineering drawings	
Activities	**Hours**
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	3
Unit 11 (de 11): Assemblies and standard parts libraries	
Activities	**Hours**
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	4
Global activity	
Activities	**hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	15
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	26
Class Attendance (practical) [PRESENCIAL][Cooperative / Collaborative Learning]	15
Final test [PRESENCIAL][Assessment tests]	4
Writing of reports or projects [AUTÓNOMA][Group Work]	25
Writing of reports or projects [AUTÓNOMA][Problem solving and exercises]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	45
Total horas:	150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Sergio Gómez González	El gran libro de SolidWorks https://www.marcombo.com/el-gran-libro-de-solidworks-3aed-9788426726575/	Marcombo		9788426721730	2019	
Sánchez-Reyes, J., Chacón, J.M.	Apuntes de la asignatura https://campusvirtual.uclm.es/	UCLM	Ciudad Real		2021	
Tran, P.	SolidWorks 2020. Basic Tools https://www.sdcpublications.com/Textbooks/SOLIDWORKS-2020-Basic-Tools/ISBN/978-1-63057-306-5/	SDC Publications	Mission (KS)	978-16305730655	2019	Texto básico sobre SolidWorks
Félez Mindán, Jesús	Ingeniería gráfica y diseño https://www.sintesis.com/ebook/ingenieria-42/ingenieria-grafica-y-diseno-ebook-694.html	Síntesis		978-84-975649-9-1	2008	
Preciado Barrera, C.	Normalización del dibujo técnico: Escuelas de ingeniería. C www.editorialdonostiarra.com	Donostiarra		84-7063-309-0	2004	