UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: ALGEBRA
Code: 56700
Type: BASIC
ECTS credits: 6
Degree: 403 - UNDERGRADUATE DEGREE PROGRAMME IN AEROSPACE ENGINEERING
Academic year: 2023-24
Center: 303 - E.DE INGENIERÍA INDUSTRIAL Y AEROESPOACIAL DE TOLEDO
Group(s): 40
Year: 1
Duration: First semester
Main language: Spanish
Second language:
Use of additional languages:
English Friendly: N
Web site:
Bilingual: N

Lecturer: **MARIA FUENSANTA ANDRES ABELLAN** - Group(s): **40**

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Lecturer: **DAMIAN CASTAÑO TORRIJOS** - Group(s): **40**

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Lecturer: **JESÚS CASTELLANOS PARRA** - Group(s): **40**

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Lecturer: **JESUS ROSADO LINARES** - Group(s): **40**

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Lecturer: **DAVID RUIZ GRACIA** - 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
CA01	Ability to carry out bibliographic searches, use databases and other sources of information for its application in tasks related to Technical Aeronautical Engineering.
CA04	Ability to select advanced tools and techniques and their application in the field of Aeronautical Technical Engineering.
CA05	Knowledge of the methods, techniques and tools as well as their limitations in the application for the resolution of problems typical of Aeronautical Technical Engineering.
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.
CB05	Have developed the necessary learning abilities to carry on studying autonomously
CE01	Ability to solve mathematical problems that may arise in engineering. Ability to apply knowledge of: linear algebra; geometry; differential geometry; differential and integral calculus; differential and partial derivative equations; numerical methods; numerical algorithmic; statistics and optimization.
CT02	Knowledge and application of Information and Communication Technologies (ICT).
CT03	Correct use of oral and written communication.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Additional outcomes

6. Units / Contents

Unit 1:

Unit 2:

Unit 3:
Unit 4:
Unit 5:
Unit 6:
Unit 7:
Unit 8:
Unit 9:

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	CE01 CT03	0.88	22	N	-	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	CA04 CA05 CB02 CE01 CT03	0.64	16	N	-	
Computer room practice [ON-SITE]	Problem solving and exercises	CA04 CA05 CE01 CT02	0.56	14	N	-	
Group tutoring sessions [ON-SITE]	Guided or supervised work	CE01 CT03	0.08	2	N	-	
Practicum and practical activities report writing or preparation [OFF-SITE]	Cooperative / Collaborative Learning	CA01 CB01 CB02 CB03 CE01 CT02 CT03	0.8	20	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study	CB01 CB05 CE01	2.8	70	N	-	
Computer room practice [ON-SITE]	Assessment tests	CB01 CB02 CB05 CE01 CT02 CT03	0.04	1	Y	Y	
Final test [ON-SITE]	Assessment tests	CB01 CB02 CB05 CE01 CT03	0.12	3	Y	Y	
Progress test [ON-SITE]	Assessment tests	CB01 CB02 CB05 CE01 CT03	0.08	2	Y	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
Practicum and practical activities reports assessment	10.00%	10.00%	
Assessment of activities done in the computer labs	10.00%	20.00%	
Progress Tests	20.00%	0.00%	
Final test	60.00%	70.00%	
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
Class Attendance (theory) [PRESENCIAL][Lectures]	22
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	16
Computer room practice [PRESENCIAL][Problem solving and exercises]	14
Group tutoring sessions [PRESENCIAL][Guided or supervised work]	2
Practicum and practical activities report writing or preparation [AUTÓNOMA][Cooperative / Collaborative Learning]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	70
Computer room practice [PRESENCIAL][Assessment tests]	1
Final test [PRESENCIAL][Assessment tests]	3
Progress test [PRESENCIAL][Assessment tests]	2

Global activity

Activities	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	22
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	16
Computer room practice [PRESENCIAL][Problem solving and exercises]	14
Group tutoring sessions [PRESENCIAL][Guided or supervised work]	2
Final test [PRESENCIAL][Assessment tests]	3
Study and Exam Preparation [AUTÓNOMA][Self-study]	70
Practicum and practical activities report writing or preparation [AUTÓNOMA][Cooperative / Collaborative Learning]	20
Progress test [PRESENCIAL][Assessment tests]	2

Computer room practice [PRESENCIAL][Assessment tests]	1
	Total horas: 150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Fernández, C y otros	Ecuaciones Diferenciales y en Diferencias	Thomson		84-9732-196-7	2003	Recomendado para el tema 9
Rojo, J. Marín, I.	Ejercicios y Problemas de Álgebra lineal	Mac Graw-Hill		84-481-1889-8	1994	Bibliografía complementaria
Rojo, J.	Álgebra Lineal. 2ª Ed	Mac Graw-Hill		978-84-481-5635-0	2007	Bibliografía complementaria
Merino, L. Santos E	Algebra Lineal con Métodos Elementales	Thomson		84-9732-481-1	2006	Interesante exposición teórica
Arsevú, J.	Problemas Resueltos de Álgebra Lineal	Thomson		84-9732-284-3	2005	Libro de problemas recomendado
García,A y otros	Cálculo I	CLAGSA		978-846-04-6814-1	1993	Recomendado para el tema 1
Kolman, B	Álgebra Lineal con Aplicaciones y Matlab. 6ª Ed.	Prentice Hall		970-17-0265-4	1999	Bibliografía complementaria
Bretscher, O.	Linear Algebra with Application 5th Ed	Pearson		976-03-217-9694-3	2012	Bibliografía complementaria
Friedberg, S. H.; Insel, A. J.; Spence, L. E.	Linear Algebra, 4th Ed.	Pearson		978-01-300-8451-4	2003	Bibliografía complementaria
Burgos, Juan de	Algebra Lineal	Mac Graw-Hill		84-481-0134-0	1993	Clara exposición teórica con una gran cantidad de ejemplos y problemas.
Villa, A de la	Problemas de Álgebra	CLAGSA		84-605-0390-9	1998	Libro de problemas recomendado
Larson y otros	Álgebra Lineal	Pirámide		84-368-1876-4	2004	Bibliografía complementaria
Belmonte J.	Problemas resueltos de Álgebra Lineal con aplicaciones	Lulú			2020	Bibliografía recomendada
Hernández E.	Álgebra y Geometría	Addison-Wesley		978-8478291298	1994	Bibliografía recomendada
Aranda E.	Álgebra Lineal con aplicaciones y Phyton	Lulú			2019	Bibliografía recomendada
Strang G.	Álgebra Lineal y sus aplicaciones	Cengage Learning Editores SA		9789706866097	2006	Bibliografía recomendada