

**1. General information****Course:** STATISTICS**Type:** BASIC**Degree:** 357 - UNDERGRADUATE DEGREE PROGRAMME IN ELECTRICAL ENGINEERING (TO)**Center:** 303 - E.DE INGENIERÍA INDUSTRIAL Y AEROSPOACIAL DE TOLEDO**Year:** 1**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 56307**ECTS credits:** 6**Academic year:** 2022-23**Group(s):** 40 41**Duration:** C2**Second language:****English Friendly:** Y**Bilingual:** N**Lecturer:** CARLOS DE LA CALLE ARROYO - 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
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.
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.
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 Electrical Engineering.
A17	Ability to apply principles and methods of quality control.
B01	Ability to solve mathematical problems that occur in engineering. Aptitude to apply knowledge of: linear algebra; geometry; differential geometry; differential and integral calculus; differential and partial differential equations; numerical methods; numerical algorithms; statistics and optimization.

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

Know the main approaches for resolution through using numerical methods, to use some statistical software packages at user level, data processing, mathematical calculus and visualization, set out algorithms and program through programming language of a high level, visualize functions, geometric figures and data, design experiments, analyze data and interpret results

Be able to express yourself correctly both orally and in writing, and, in particular, to know how to use mathematical language to express with precision quantities and operations that appear in industrial engineering. Become accustomed to working in a team and behaving respectfully.

Know and interpret the fundamental measurements of descriptive statistics, approximate bidimensional data through regression adjustment, know the fundamentals of probability, estimate the parameters of statistical models, construct confidence intervals, contrast hypotheses and take decisions.

Additional outcomes**6. Units / Contents****Unit 1:****Unit 2:****Unit 3:**

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		1.2	30	Y	N	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises		0.6	15	Y	N	
Laboratory practice or sessions [ON-SITE]	Problem solving and exercises		0.4	10	Y	N	
Study and Exam Preparation [OFF-SITE]	Self-study		3.6	90	N	-	
Formative Assessment [ON-SITE]	Assessment tests		0.2	5	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
Assessment of problem solving and/or case studies	20.00%	20.00%	
Laboratory sessions	10.00%	10.00%	
Mid-term tests	70.00%	0.00%	
Final test	0.00%	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
Formative Assessment [PRESENCIAL][Assessment tests]	5
Unit 1 (de 3):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	10
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	5
Laboratory practice or sessions [PRESENCIAL][Problem solving and exercises]	4
Study and Exam Preparation [AUTÓNOMA][Self-study]	30
Unit 2 (de 3):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	10
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	5
Laboratory practice or sessions [PRESENCIAL][Problem solving and exercises]	2
Study and Exam Preparation [AUTÓNOMA][Self-study]	30
Unit 3 (de 3):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	10
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	5
Laboratory practice or sessions [PRESENCIAL][Problem solving and exercises]	4
Study and Exam Preparation [AUTÓNOMA][Self-study]	30
Global activity	
Activities	hours
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	15
Class Attendance (theory) [PRESENCIAL][Lectures]	30
Laboratory practice or sessions [PRESENCIAL][Problem solving and exercises]	10
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Formative Assessment [PRESENCIAL][Assessment tests]	5
Total horas: 150	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Montgomery, Douglas C.	Probabilidad y estadística	Limusa Wiley,		978-968-18-5915-2	2007	

Walpole, Ronald E.	aplicadas a la ingeniería Probabilidad y estadística para ingeniería y ciencias	Pearson Educación	978-970-26-0936-0	2007	
M. T. González Manteiga y A. Pérez de Vargas	Estadística aplicada una visión instrumental https://ebookcentral.proquest.com/lib/bibliotecaucm-ebooks/detail.action?docID=3189079	Ediciones Díaz de Santos	9788479789138	2009	
S. M. Ross y T. Valdés Sánchez	Introducción a la estadística https://ebookcentral.proquest.com/lib/bibliotecaucm-ebooks/detail.action?docID=5635443	Editorial Reverté	9788429151916	2014	
A. J. Arriaza Gómez y otros	Estadística Básica con R y R Commander http://knuth.uca.es/ebrcmdr	UCA	978-84-9828-186-6		Libro Libre
C. M. Cuadras	Problemas de probabilidades y estadística	PPU	84-86130-06-9		Signatura Biblioteca: 519.2 CUA
C. Pérez López	Estadística : problemas resueltos y aplicaciones	Pearson educación	84-205-3780-2	2003	Signatura Biblioteca: 519.2 PER
D. Peña	Fundamentos de estadística http://site.ebrary.com/lib/bibliotecaucm/detail.action?adv.x=1&docID=11028686&f00=all&p00=Estad%C3%ADstica	Alianza Editorial	978-84-206-8380-5	2008	Signatura Biblioteca: 519.2 PEÑ
D. S. Moore	Estadística aplicada básica http://site.ebrary.com/lib/bibliotecaucm/docDetail.action?docID=10609557	Antoni Bosch	978-84-95348-04-3	2009	TEXTO DOCENTE Signatura Biblioteca: 519.2 MOO
E. Gutiérrez González y O. Vladimirovna Panteleeva	Estadística inferencial para ingeniería y ciencias http://site.ebrary.com/lib/bibliotecaucm/detail.action?adv.x=1&docID=11379359&f00=all&p00=Estad%C3%ADstica	Grupo Editorial Patria	9786077444879	2016	
F.J. Martín Pliego López y otros	Problemas de inferencia estadística	Thomson- Paraninfo	84-9732-355-6	2002	Signatura Biblioteca: 519.2(076) MAR
H. A. Quevedo Urías y B. R. Pérez Salvador	Estadística para ingeniería y ciencias http://site.ebrary.com/lib/bibliotecaucm/detail.action?docID=11013660	Grupo Editorial Patria	9786074389395	2014	
I. Espejo Miranda y otros	Estadística descriptiva y probabilidad: teoría y problemas http://site.ebrary.com/lib/bibliotecaucm/detail.action?docID=10844601	UCA	978-84-9828-467-6	2009	
J.L. Devore	Probabilidad y estadística para ingeniería y ciencias.6ª edición.	Thomson	970-686-457-1	2005	Signatura Biblioteca: 519.2 DEV
M. Febrero Bande y otros	Prácticas de Estadística en R http://eio.usc.es/pub/pateiro/files/pubdocentepracticasesestadistica.pdf	Universidad Santiago de Compostela	978-84-691-0975-1	2008	
M. H. DeGroot	Probabilidad y estadística	Addison-Wesley Iberoamericana	0-201-64405-3	1988	Signatura Biblioteca: D 10454
R.S. Kenet y S. Zacks	Estadística Industrial Moderna	Thomson	970-686-027-4	2000	Signatura Biblioteca: 519.2 KEN
S. J. Álvarez Contreras	Estadística aplicada	CLAG	84-921847-4-4	2011	Signatura Biblioteca: 519.2 ALV
W. Mendenhall	Probabilidad y estadística para ingeniería y ciencias	Pretice Hall	968-880-960-8	1997	Signatura Biblioteca: D 519.2(076) MEN
I. Espejo Miranda, F. Fernández Palacín y M.A. López Sánchez	Inferencia estadística: teoría y problemas https://ebookcentral.proquest.com/lib/bibliotecaucm-ebooks/detail.action?docID=4626891	Servicio de Publicaciones de la Universidad de Cádiz	9788498285581	2016	