

SUBJECT TEACHING GUIDE

G735 - Applied Mechanics

Degree in Mechanical Engineering

Academic year 2021-2022

1. IDENTIFYING DATA					
Degree	Degree in Mechanical Engineering			Type and Year	Compulsory. Year 2
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Fundamentals of Mechanical Engineering Module: Further Basic Training				
Course unit title and code	G735 - Applied Mechanics				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. INGENIERIA ESTRUCTURAL Y MECANICA				
Name of lecturer	ANA MAGDALENA DE JUAN DE LUNA				
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Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 2. DESPACHO (S2045)				
Other lecturers					

3.1 LEARNING OUTCOMES

- To solve and to critically discuss the results of rigid body problems, in Statics, Kinematics and Dynamics.
- To comprehend the theoretical background of rigid body modelization, in Statics, Kinematics and Dynamics.

4. OBJECTIVES

- To solve and to critically discuss the results of rigid body problems, in Statics, Kinematics and Dynamics.
- To comprehend the theoretical background of rigid body modelization, in Statics, Kinematics and Dynamics.

6. COURSE ORGANIZATION

CONTENTS	
1	STATICS - Vectorial calculus. - Forces. - Statics without friction. - Statics with friction.
2	KINEMATICS - Material point Kinematics. - Relative motion Kinematics. - Rigid body Kinematics. - Planar motion Kinematics.
3	DYNAMICS - Moments of inertia and center of mass. - Material point Dynamics. - Rigid body Dynamics. - Energy.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Statics	Written exam	No	Yes	33,00
Kinematics	Written exam	No	Yes	33,00
Dynamics	Written exam	No	Yes	34,00
TOTAL				100,00
Observations				
<p>The final grade of the subject will be the result of making the weighted average of the different grades obtained in each of the blocks. When the resulting average is less than 5.00 points, an exam of the whole subject will be performed in the extraordinary call. In no case the marks for subsequent courses and the extraordinary call will be retained.</p> <p>Given the current uncertain health situation, in case that the competent health and educational authorities do not allow a face-to-face evaluation, a distance evaluation modality will be adopted using telematic means.</p>				
Observations for part-time students				
<p>Part-time students who can not attend practice sessions may take a written exam instead. The rest of the evaluation tests will be done jointly with the other students.</p>				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- Niembro de la Bárcena, J.L. e Iglesias Santamaría, M. "Apuntes de Mecánica. Estática. Teoría y Problemas".
- Niembro de la Bárcena, J.L. y Fernández del Rincón, A. "Apuntes de Mecánica. Cinemática. Teoría y Problemas".
- Niembro de la Bárcena, J.L. y De Juan de Luna, A.M. "Apuntes de Mecánica. Dinámica. Teoría y Problemas".
- Bastero, J. M.; Casellas, J., "Curso de Mecánica", Ed. Eunsa.
- Agulló Batlle, J. "Mecánica de la partícula y del sólido rígido". Publicaciones OK Punt.
- Prieto Alberca, "Curso de Mecánica Racional. Cinemática y Estática. Dinámica". Aula Documental de Investigación.
- A. Bilbao y E. Amezua, "Mecánica Aplicada",
- Beer, F. P.; Johnston, E. R., "Mecánica vectorial para ingenieros, estática y dinámica", Ed. McGraw Hill
- Riley Sturges "Ingeniería Mecánica. Estática y Dinámica". Ed. Reverte.
- "Working Model3D. Tutorial Guide"
- "Working Model3D. User's Manual"