

SUBJECT TEACHING GUIDE

G722 - Automotive Engineering

Degree in Industrial Technologies Engineering

Academic year 2025-2026

1. IDENTIFYING DATA					
Degree	Degree in Industrial Technologies Engineering			Type and Year	Optional. Year 4
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Mechanical Design Optional Module				
Course unit title and code	G722 - Automotive Engineering				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. INGENIERIA ESTRUCTURAL Y MECANICA				
Name of lecturer	FERNANDO VIADERO RUEDA				
E-mail	fernando.viadero@unican.es				
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 2. DESPACHO (S2048)				
Other lecturers	ADRIAN SOLORZANO TERAN				

3.1 LEARNING OUTCOMES

- The student will have a good knowledge of vehicle dynamic theory, vehicle history and legislation as well as their influence on the technical performance of vehicles.
- The student will have a good knowledge of vehicle structure and the parts which comprise them, how they work as well as how they are manufactured.
- The student will be able to assess vehicles from the industrial, social and ecological point of view.

4. OBJECTIVES

- To learn about the legislation, environmental concerns and history of vehicles.
- To learn about structure, parts, technical requirements, materials and manufacturing process of vehicles.
- To learn about railway vehicle engineering

6. SUBJECT PROGRAM	
CONTENTS	
1	Introduction. Legislation
2	Vehicle/Road interaction and Tyre/Road contact
3	Suspensión and Steering systems. Lateral Car Dynamics
4	Traction. Longitudinal Car Dynamics
5	Braking systems
6	Power transmission systems
7	Introduction to Railways Engineering

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Final exam	Written exam	Yes	Yes	60,00
Continuous evaluation	Others	No	Yes	40,00
TOTAL				100,00
Observations				
<p>The used evaluation system agrees with Universidad de Cantabria legislation. The final grade of the course will be the result of the weighting of the different grades obtained in each of the blocks . When the result is less than 5.00 points or in any of the course blocks the student does not reach the minimum qualification, the remedial examn will consist of an examination of the corresponding blocks in the extraordinary call. No mark will be saved for successive courses.</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>The evaluation system agrees with Universidad de Cantabria legislation. The part-time students which cannot attend the lectures must arrange with the professor a course work, in order to be able to obtain the 'continuous evaluation' mark.</p>				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
<p>Luque, P.; Alvarez, D.; Vera, C., "Ingeniería del Automóvil", Thomson, 2004.</p> <p>Diaz, V., Olmeda, E., Gauchía, A., García-Pozuelo, D., López-Boada, B., López-Boada, M.J., Fuentes, J., "Automóviles y ferrocarriles", Ed. UNED, 2012.</p> <p>Cascajosa, M., "Ingeniería de vehículos", Tebar, 2000.</p>