SUBJECT TEACHING GUIDE

G737 - Fluid Mechanics

Degree in Mechanical Engineering

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Degree in Mechanical Engineering			Type and Year	Compulsory. Year 3
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Thermofluid Mechanics Module in Common with the Industrial Branch				
Course unit title and code	G737 - Fluid 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 ELECTRICA Y ENERGETICA
Name of lecturer	JORGE TOMAS CUELI LOPEZ
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Other lecturers	SEVERIANO FIDENCIO PEREZ REMESAL MANUEL ODRIOZOLA RODRIGUEZ

3.1 LEARNING OUTCOMES
- Apply the principles of fluid mechanics to solve problems in the field Engineering, assessing and adopting reasonable simplifications in every situation.
- Fluidomecánicas measurements of variables and analyze the status of processes fluid mechanical from measured values.
- Calculate, project and interpret the operation of systems with fluid flow, in particular transport systems pipes and channels.
- Knowledge of classical analysis techniques in fluid mechanics, ie, differential analysis, comprehensive analysis and analysis dimensional.Metodologías analysis and experimentation in Fluid Mechanics.

4. OBJECTIVES

Provide students with introductory knowledge of fluid mechanics, including static fluid, differential and integral on fluid motion equations, dimensional analysis and internal and external flows.

Getting students to understand the physical mechanisms involved in the flow of fluids including the forces generated by the interaction of fluids with solids.

Equipping students with skills for the design and improvement of facilities and fluid systems in accordance with the regulations.

6. SUBJECT PROGRAM

CONTENTS	
1	Introduction to Fluid Mechanics, Hydrostatic Kinematics and Fluid Dynamics, Calculation of pipes and channels External flow, Water hammer and cavitation, Introduction to Hydraulic Machines

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Theoretical and practical exam of the subject	Written exam	Yes	Yes	60,00
Note of classroom works	Work	No	Yes	30,00
Laboratory practice evaluation	Others	No	No	10,00
TOTAL				100,00

Observations

The remote evaluation of the works, practical laboratory exercises and written tests is foreseen, in the case of a new health alert by COVID-19 making it impossible to carry out the evaluation in person.
No grade earned for subsequent courses is saved.

Observations for part-time students

Part-time students who do not attend classes can be assessed in ordinary and extraordinary sessions (theory, problems and laboratory exam).

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Mecánica de Fluidos y Máquinas Hidráulicas; Claudio Mataix; Ed. Oxford

Mecánica de fluidos, F.M. White. Ed. McGraw-Hill, 6ª Ed., Madrid 2008.

Mecánica de fluidos incompresibles y turbomáquinas hidráulicas; José Agüera ;Ed. Ciencia 3.S.A.

Elementos de mecánica de fluidos; A. Alvarado; Servicio de Publicaciones E.T.S.I.C.C.P.; U.Cantabria

Mecánica de Fluidos; F. White; Ed. McGrawhill

Mecánica de Fluidos; A. Crespo; Ed. Thomson