

## SUBJECT TEACHING GUIDE

G591 - Fluids Mechanics and Hydraulic Machines

Degree in Energy Resources Engineering

Academic year 2019-2020

1. IDENTIFYING DATA					
Degree	Degree in Energy Resources Engineering			Type and Year	Compulsory. Year 3
Faculty					
Discipline	Subject Area: Mining Pre-Technology Module: Training in Common with the Mining Branch				
Course unit title and code	G591 - Fluids Mechanics and Hydraulic Machines				
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	JUAN CARCEDO HAYA				
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Office	E.P. de Ingeniería de Minas y Energía. Planta: + 1. DESPACHO 18 - I. AMBIENTAL (131)				
Other lecturers	JORGE TOMAS CUELI LOPEZ				

### 3.1 LEARNING OUTCOMES

- Students will be able to apply knowledge of fluid mechanics for the maintenance of facilities and the development of engineering projects
- Students will be able to apply knowledge of fluid mechanics for hydraulic machinery design and its applications.

### 4. OBJECTIVES

- Acquiring the knowledge and techniques of fluid mechanics to solve engineering problems related to Hydraulic.
- Applying theoretical methods to hydraulic machinery facilities.
- Knowing and understanding the operating principles, structure and use of hydraulic machines.

## 6. COURSE ORGANIZATION

CONTENTS	
1	Introduction to Fluid Mechanics Hydrostatic Kinematics and Fluid Dynamics Dimensional Analysis and Modelling Head Losses Flow in Pipes Open-channel Flow Water Hammer and Cavitation
2	Introduction to Hydraulic Machines Centrifugal pumps Pump tests and coupling

## 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
PERIODIC ASSESSMENTS (NON ELIMINATING)	Written exam	No	Yes	30,00
LAB PRACTICE	Written exam	No	No	10,00
FINAL EXAM	Written exam	Yes	Yes	60,00
<b>TOTAL</b>				<b>100,00</b>
Observations				
Students pass the course if they obtain an average mark of 5 (out of 10). This mark is the result of average the periodic assessments, lab practice and the final exam.				
Observations for part-time students				
Part-time students can do an exam which evaluates all the topics covered by the course (as well as practical activities). For this purpose the student must communicate his choice to the teacher by email before the final exam date. To pass the course it is necessary to obtain a mark of 5 out of 10.				

## 8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC
"Mecánica de Fluidos Incompresibles y Turbomáquinas Hidráulicas". Disponible en <a href="http://www.uco.es/termodinamica/">http://www.uco.es/termodinamica/</a>
"Mecánica de Fluidos y Máquinas Hidráulicas" C. Mataix; Ed. Oxford
"Mecánica de Fluidos. Fundamentos y Aplicaciones". Y Çengel, J Cimbala. Ed. McGrawHill