

SUBJECT TEACHING GUIDE

M1890 - Hydrology

Master's degree in integrated management of water systems

Academic year 2022-2023

1. IDENTIFYING DATA					
Degree	Master's degree in integrated management of water systems			Type and Year	Compulsory. Year 1
Faculty	School of civil Engineering				
Discipline					
Course unit title and code	M1890 - Hydrology				
Number of ECTS credits allocated	3	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE				
Name of lecturer	JOSE BARQUIN ORTIZ				
E-mail	jose.barquin@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 0. DESPACHO DE JOSE BARQUIN ORTIZ (0022)				
Other lecturers					

3.1 LEARNING OUTCOMES
- To learn and understand the atmospheric processes of hydrologic relevance and how to deal with meteorological information.
- Advanced concepts on rainfall-runoff modeling.
- General concepts on subsurface hydrology.
- To learn river discharge measuring methods.
- To develop the required capabilities to transform, analyze and present hydro-meteorological information.
- To develop a working knowledge on hydrograph generation and analysis.

4. OBJECTIVES

The main objective of the course is to teach the student the processes at work in the hydrologic cycle and how to use that knowledge to the modeling of hydrologic systems.

6. COURSE ORGANIZATION

CONTENTS	
1	The hydrologic cycle
2	Basic concepts in hydrology
3	Hydrometry: Gauging Flow
4	Notions on meteorology
5	Study of precipitation
6	Statistics in hydrology
7	Groundwater
8	Interception-Evaporation-Transpiration
9	River discharge and runoff
10	Study of the Hydrograph
11	Hydrological modelling
12	Final evaluation

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Final exam	Written exam	Yes	Yes	40,00
Report describing the work done to solve a hydrological modeling problem.	Work	No	Yes	30,00
Report containing the solutions to all the proposed problems.	Work	No	No	20,00
Field visit and report	Laboratory evaluation	No	No	10,00
TOTAL				100,00
Observations				
<p>As accorded by the relevant committees:</p> <ul style="list-style-type: none"> + As a general rule and unless stated otherwise anywhere in this guide, a student cannot request a reexamination if the original grade obtained in the evaluation was not a fail. + As a general rule and unless stated otherwise anywhere in this guide, the reexamination activity will take the same form than the original evaluation activity. <p>Grades are measured on a numeric scale going from 0 to 10, where values smaller than 5 are a Fail.</p> <p>Only for sufficiently justified reasons (i.e. sanitary restrictions), the evaluation activities could be organized online, if authorized by the School Director.</p>				
Observations for part-time students				
<p>Part-time students will need to agree with the responsible professor a teaching and evaluation plan to ensure an adequate transfer of knowledge as well as a fair evaluation procedure. The minimum requirement for this students will be to complete a piece of homework and to assist to the final exam of the subject. The weights of each part will be proportional to the weight those parts presents in the general evaluation scheme of the subject.</p>				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

S. Lawrence Lingman. Physical Hydrology. Waveland Press, Inc. Long Grove. EEUU. 2002.

Wilfried Brutsaert. Hydrology. An introduction. Cambridge University Press. Cambridge, UK. 2005