

SUBJECT TEACHING GUIDE

M1894 - Dynamics and Transport in Continental Waters

Master's degree in integrated management of water systems

Academic year 2019-2020

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	M1894 - Dynamics and Transport in Continental Waters				
Number of ECTS credits allocated	4	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	MANUEL DEL JESUS PEÑIL				
E-mail	manuel.deljesus@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 3. LOCAL 11 - Hidráulica (3009)				
Other lecturers	JOSE BARQUIN ORTIZ				

3.1 LEARNING OUTCOMES

- To learn and understand the processes that induce morphological changes in the river bed
- To learn and understand the hydrodynamical processes that take place in the river bed.
- To learn how to compute the sediment flux in a river making use of different formulations.
- To learn and apply sediment simulation models for rivers.

4. OBJECTIVES

The student will be able to describe the physical mechanisms that determine river morphology and that govern river dynamics.

6. COURSE ORGANIZATION

CONTENTS	
1	Flow in rivers
2	Fluvial morphology
3	Sediment transport in river beds
4	Fluvial hydraulics models
5	Individual work presentation

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Individual work presentation	Work	No	Yes	50,00
Final exam	Written exam	Yes	Yes	50,00
TOTAL				100,00
Observations				
<p>As accorded by the relevant committees:</p> <p>+ 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.</p> <p>+ 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> <p>Grades are measured on a numeric scale going from 0 to 10, where values smaller than 5 are a Fail.</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
Martín Vide, J.P. (1997). Ingeniería Fluvial. Servicio de Publicaciones UPC.
Ven te Chow. (1994). Hidráulica de canales abiertos. McGraw Hill.
Garde, R.J. (2006). River Morphology. New Age International Limited Publishers.
Scumm, S.A. (2005). River variability and complexity. Cambridge.
Van Rijn, L.C.(1989). Sediment Transport by Currents and Waves. Delft Hydraulics.