

SUBJECT TEACHING GUIDE

M2164 - Design of Environmental Installations

Master's Degree in civil Engineering, Canal and Port Engineering

Academic year 2022-2023

1. IDENTIFYING DATA					
Degree	Master's Degree in civil Engineering, Canal and Port Engineering			Type and Year	Optional. Year 2
Faculty	School of civil Engineering				
Discipline	SPECIALITY IN WATER, ENERGY AND THE ENVIRONMENT				
Course unit title and code	M2164 - Design of Environmental Installations				
Number of ECTS credits allocated	3	Term	Semester based (2)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE				
Name of lecturer	RUBEN DIEZ MONTERO				
E-mail	ruben.diezmontero@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 2. DESPACHO - ING. SANITARIA (2026)				
Other lecturers					

3.1 LEARNING OUTCOMES
-- Identify the applicable legislation and the starting data to be used in the design of environmental facilities.
-- Select the most suitable flow line and processes for a given environmental installation.
-- Dimension the elements in detail and specify the necessary machinery, using design models.
-- Writing and presentation of projects of environmental facilities.

4. OBJECTIVES
To be able to develop a detailed project of an environmental facility, given the specifications of a real tender for a water treatment facility or a solid waste facility.

6. COURSE ORGANIZATION	
CONTENTS	
1	1.- Regulation, Bidding Documents for Projects / Works. Input data, Objectives to be achieved. Water Treatment Plant, Wastewater Treatment Plant, Urban Solid Waste Treatment Facilities
2	2.- Alternative options. Selection criteria. Process selection.
3	3.-Flowcharts, main line, auxiliary lines.
4	4.- Sizing of processes, machinery, specifications.
5	5.- General plant, Network plants. Auxiliary works.
6	6.- Spatial design. Piezometric line.
7	7.- Operation and Maintenance, modeling, Project / Offers.
8	8.- Case Studies
9	9.- Presentation of projects

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
The project developed during the course must be presented orally, complying with the Standards indicated in the subject.	Work	Yes	Yes	100,00
TOTAL				100,00
Observations				
The project developed during the course must be presented orally, complying with the Standards indicated in the subject.				
Observations for part-time students				
The part-time student will have the same evaluation system				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Pliegos reales de concursos de sistemas de tratamiento de aguas potables, de aguas residuales, o de Instalaciones de Tratamiento de residuos
Normas correspondientes a proyectos de las correspondientes instalaciones ambientales