VNIVERSITAT DE VALÈNCIA

Course Guide
45002 Advanced Modelling of Water Treatment

COURSE DATA

DATA SUBJECT

Code: 45002
Name: Advanced Modelling of Water Treatment
Cycle: Master's Degree
ECTS Credits: 7.5
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
2250 - Master's Degree in Environmental Engineering	Escola Tècnica Superior d'Enginyeria	1	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2250 - Master's Degree in Environmental Engineering	Modelación avanzada de tratamiento de aguas	COMPULSORY

COORDINATION

MARTI ORTEGA NURIA

SUMMARY

The University responsible for this subject is the Universitat Politècnica de València (UPV). For this reason, the teaching guide can be found on the website of the Universitat Politècnica de València (UPV):

https://gdocu.upv.es/alfresco/service/api/internal/shared/node/content/Ydic0PQsS3y7f8CnAo4v4g?a=true.pdf

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

COMPETENCES / LEARNING OUTCOMES

2250 - Master's Degree in Environmental Engineering

Apply environmental engineering designs to produce solutions that meet specific needs addressing public health, safety and welfare taking account of global, cultural, social, environmental and economic factors.

Design, calculate and select engineering solutions to environmental problems, comparing alternatives that include emerging technologies under criteria of technical, social, economic and environmental viability.

Develop and apply mathematical models for the simulation, optimisation or control of processes in the field of environmental engineering.

Develop environmental solutions under the principles of circular economy and the sustainable development goals.

Identify, formulate and solve complex environmental engineering problems by applying engineering, scientific and mathematical principles.

Learn and apply new knowledge, using appropriate learning strategies.

Manage and operate treatment and/or purification systems in the field of environmental engineering

Prepare and draft technical reports and/or environmental engineering projects considering technical, economic, social, energy and/or environmental aspects.

Recognise the ethical and professional responsibilities of environmental engineering and make informed judgements considering the impact of engineering solutions in global, economic, environmental and social contexts.

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

Work in a team effectively and with leadership, in a collaborative and inclusive environment, setting goals, planning tasks and meeting objectives.

DESCRIPTION OF CONTENTS

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	15,00
Theoretical and practical classes	3,00
Computer classroom practice	6,00
Classroom practices	51,00
Total hours	**75,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	0,00
Independent study and work	0,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00
Total hours	**0,00**

TEACHING METHODOLOGY

EVALUATION

REFERENCES