

COURSE NAME

Name: **CONTROL AND TREATMENT OF WATER**

Code: 101156

Curriculum: **DEGREE IN CIVIL ENGINEERING**

Year: 3

Name of the module to which it belongs: SPECIFIC HYDROLOGY TECHNOLOGY MODULE

Subject: SANITARY ENGINEERING

Nature: OBRIGATORY Duration: FIRST SEMESTER

ECTS Credits: 4.5

Classroom hours: 45

Face-to-face classroom percentage: 40%

Non-contact hours: 67.5 Online

FACULTY DETAILS

Name: GÓMEZ CÁMER, JUAN LIOS (Coordinator)

Department: INORGANIC CHEMISTRY AND CHEMICAL ENGINEERING

Area: INORGANIC CHEMISTRY

Location of the office: EDIFICIO MARIE CURIE, 1ª PLANTA

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Name: HERNÁNDEZ RENTERO, CELIA

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Name: SOLER PIÑA, FRANCISCO JAVIER

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SKILLS

- CB1 Have and understand specific knowledge of the study area of the Degree that gives skills for the exercise of the profession of Technical Civil Engineering.
- CB2 Have and understand current and cutting-edge knowledge of the field of mining engineering.
- CB3 Be able to apply the knowledge acquired to their work or vocation in a professional manner. Prepare and defend arguments in the relevant knowledge area.
- CB6 Convey information, ideas, problems and solutions to both specialist and non-specialist audiences.
- CB7 Possess the learning skills necessary to undertake studies with a high degree of autonomy.
- CU2 Know and refine the user level of ITs.
- CEH2 Knowledge and understanding of ecosystem functions and environmental factors.
- CEH3 Knowledge of urban services projects related to water distribution and sanitation

OBJECTIVES

This course is aimed at students in the 3rd year of the Civil Engineering Degree.

The first objective of this subject is to show the students the enormous importance of understanding the basic concepts of chemistry and the chemical processes that take place in water, as well as in its treatment, for the well-being and development of our society.

The second objective is to show the student what a Drinking Water Treatment Plant (DWTP) consists of and the different processes that take place in it.

The third objective is to show the student what a Wastewater Treatment Plant (WWTP) consists of and the different processes that take place in it.

Finally, the students should also know where to look for the regulations related to water control and treatment.

CONTENTS:

1. Theoretical contents

TOPIC 1: WATER CHEMISTRY I: GENERAL CONCEPTS.
TOPIC 2: WATER CHEMISTRY II: ACID-BASE EQUILIBRIUM.
TOPIC 3: WATER CHEMISTRY III: PRECIPITATION EQUILIBRIA.
TOPIC 4: WATER CHEMISTRY IV: OXIDATION-REDUCTION EQUILIBRIA.
TOPIC 5: IMPORTANT CONCEPTS IN AQUATIC CHEMISTRY.
TOPIC 6: WATER QUALITY CONTROL.
TOPIC 7: WASTEWATER TREATMENT.
TOPIC 8: WATER TREATMENT AND PURIFICATION STATIONS.

2. Practical contents.

Basic concepts for chemical formulas.
Water Chemistry Problems
Preparing solutions
Precipitation and separation
Water hardness
Measurement techniques: UV quantification.