

COURSE NAME

Name: **WORKS AND HIDRAULIC INSTALATIONS**

Code: 101212

Curriculum: **DEGREE IN ENERGY ENGINEERING AND MINERAL RESOURCES**

Year: 3

Name of the module to which it belongs: SPECIFIC TO ENERGY RESOURCES, FUELS AND EXPLOSIVES

Subject: WORKS AND HIDRAULIC INSTALATIONS

Nature: OBRIGATORY Duration: SECOND SEMESTER

ECTS Credits: 6

Classroom hours: 60

Face-to-face classroom percentage: 40%

Non-contact hours: 90

FACULTY DETAILS

Name: GARCIA MORILLO, JORGE (Coordinator)

Centre: EPSB

Department: AGRONOMY area: HYDRAULIC ENGINEERING

Location of the office: EPSB

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SKILLS

- CB1 Have and understand specific knowledge of the field of study of mining engineering.
- CB2 Have and understand current and cutting-edge knowledge of the field of mining engineering.
- CB3 Be able to apply the knowledge acquired in professional contexts and to elaborate and defend arguments in the field of knowledge of mining engineering.
- CB7 Possess learning skills necessary to undertake further studies with a high degree of autonomy.
- CERE2 Hydraulic works and installations. Planning and management of hydraulic resources.

OBJECTIVES

-Understanding and being able to dimension hydraulic mining and supply installations, with special focus on the following aspects:

- Designing and calculating pumping and delivery systems.
- Study of the catchment and elements that make up water distribution networks, as well as the main materials used. Study of the typology and function of tanks.
- Design and calculation of the standard sections of a canal.
- Knowledge of hydraulic works related to storing waste mining liquids in ponds.

CONTENTS:

1. Theoretical contents

BLOCK 1: PUMPING AND DELIVERY SYSTEMS.

Topic 1. Pumping and delivery systems.

BLOCK 2: WATER CATCHMENT AND STORAGE.

Topic 2. Catchment of surface water and groundwater. Storage and regulation tanks. Pipework materials. Valves.

BLOCK 3: HYDRAULIC TRANSPORT WORKS.

Topic 3. Design and analysis of pressurised water distribution networks.

Topic 4. Free-flowing ducts. Canals

BLOCK 4: HYDRAULIC WORKS FOR STORING LIQUID MINING WASTE.

Topic 5. Hydraulic works for storing liquid mining waste: Dams and ponds for mining waste.

2. Practical contents.

Exercises related to each of the course blocks.