

COURSE NAME

Name: **PROPECTING OF MINERALS RESOURCES**

Code: 101207

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

Year: **3**

Name of the module to which it belongs: SPECIFIC TO MINING

Subject: DEPOSIT INVESTIGATION

Nature: OBRIGATORY Duration: FIRST SEMESTER

ECTS Credits: 6

Classroom hours: 60

Face-to-face classroom percentage: 40%

Non-contact hours: 90 Online

FACULTY DETAILS

Name: MORENO SORIANO, MARIA DEL CARMEN (Coordinador)

Department: MECHANICS

area: MINERAL PROSPECTION AND INVESTIGATION

Location of the office: EPS Belmez. Old building. (2nd Floor)

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SKILLS

- CB1 Have and understand specific knowledge of the field of study 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.
- CB4 Solve problems within the study area of Mining Engineering.
- CEEM3 General and detailed geology.

OBJECTIVES

The general goal is to provide students with theoretical and practical knowledge of Mining Prospecting Technology, in the search for mineral resources, which are so necessary and in-demand within the field of Mining Engineering. The student must be familiar with the different stages of an investigation, as well as the different techniques that can be used. Finally, the student must master the technical vocabulary specific to this field of study.

CONTENTS:

1. Theoretical contents

- TOPIC 1.- GENERAL CONCEPTS.
- TOPIC 2.- GEOLOGICAL PROSPECTING.
- TOPIC 3.- INTRODUCTION TO GEOCHEMICAL PROSPECTING.
- TOPIC 4.- GEOCHEMICAL METHODS.
- TOPIC 5.- INTRODUCTION TO GEOPHYSICAL PROSPECTING.
- TOPIC 6.- INTRODUCTION TO GEOELECTRICAL METHODS.
- TOPIC 7.- SPONTANEOUS (SELF) POTENTIAL METHOD.
- TOPIC 8.- EQUIPOTENTIAL LINES METHOD.
- TOPIC 9.- VERTICAL ELECTRICAL SOUNDING.
- TOPIC 10.- ELECTRICAL TRIAL PITS.
- TOPIC 11.- ELECTRICAL SOIL MODELLING.
- TOPIC 12.- GEOELECTRICAL PROSPECTING USING VARIABLE FIELDS.
- TOPIC 13.- INDUCED POLARISATION METHOD.

TOPIC 14.- BASIC PRINCIPLES OF GRAVIMETRIC PROSPECTING.
TOPIC 15.- GRAVITY VARIATION ON THE EARTH'S SURFACE. CORRECTIONS.
TOPIC 16.- FIELD WORK.
TOPIC 17.- QUALITATIVE AND QUANTITATIVE INTERPRETATION.
TOPIC 18.- BASIC PRINCIPLES OF MAGNETIC PROSPECTING.
TOPIC 19.- INSTRUMENTS. FIELD MAGNETOMETRY. REPRESENTING AND INTERPRETING DATA.
TOPIC 20.- AEROMAGNETIC PROSPECTING.
TOPIC 21.- BASIC PRINCIPLES OF SEISMIC PROSPECTING.
TOPIC 22.- SEISMIC REFRACTION METHOD.

2. Practical contents.

Practical exercises on the above topics.