COURSE NAME

Name: **SURVEY AND EVALUATION OF RESERVOIRS**
Code: 101206
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: SECOND SEMESTER
ECTS Credits: 4 Classroom hours: 40
Face-to-face classroom percentage: 40% Non-contact hours: 60 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.
CEEM5A	Mineralogical, petrographic tests. Sampling techniques.
CEEM5	Reservoir modeling.

OBJECTIVES

The general objective is to familiarise students with the different drilling systems depending on the type of rock to be drilled and the purpose of the borehole to be emplaced: Mining and Hydrogeological research, etc., the different logging techniques in mechanical boreholes, the different sampling techniques, and the methods used to evaluate the reserves of a deposit.

CONTENTS:

1. Theoretical contents

TOPIC 1.- GENERAL INFORMATION ON BOREHOLES.
TOPIC 2.- PERCUSSION BOREHOLES.
TOPIC 3.- ROTO-PERCUSSION BOREHOLES.
TOPIC 4.- ROTARY BOREHOLES WITH CONTINUOUS CORE RECOVERY.
TOPIC 5.- ROTARY BOREHOLES USING A HELIX.
TOPIC 6.- ROTARY DRILLING TO DEPTH. ROTARY SYSTEM.
TOPIC 7.- DIRECTION AND PROBLEMS IN DRILLING.
TOPIC 8.- BOREHOLES FOR GROUNDWATER ABSTRACTION.
TOPIC 9.- GEOPHYSICAL MAPPING.
TOPIC 10.- ELECTRICAL LOGGING
TOPIC 11.- RADIOACTIVITY LOGGING.
TOPIC 12.- OTHER LOGGING TECHNIQUES.
TOPIC 13.- DEPOSIT SAMPLING.

TOPIC 14.- PREPARATION/TREATMENT OF THE SAMPLE.
TOPIC 15.- ASSESSING RESERVES.
TOPIC 16.- METHODS FOR CALCULATING RESERVES.

2. Practical contents.

Practical 1.- Interpreting electrical logs.
Practical 2.-Defining sandy and clayey levels in Tertiary formations.
Practical 3.- Interpreting radioactivity logs.
Practical 4.- Determining sampling density. Coefficient of variation method.
Practical 5.- Determining the sampling amount. The Richards Czeczott method.
Practical 6.- Sample reduction process. Grinding and chopping.
Practical 7.-Calculating the internal and external contour of the reservoir.
Practical 8.- Assessment of reserves by applying the different classical methods.