26444 - Mineral Deposits

Información del Plan Docente

Academic Year	2018/19
Subject	26444 - Mineral Deposits
Faculty / School	100 - Facultad de Ciencias
Degree	296 - Degree in Geology
ECTS	5.0
Year	4
Semester	Second semester
Subject Type	Optional
Module	---

1.General information

1.1.Aims of the course

The subject and its learning goals results answer to the following approaches and aims:
The matter " Mineral deposits " has as principal aim that the student is capable of establishing the relation between the processes that take place during the plate tectonic and the mineral deposits formed. This knowledge establishes the basic tools in order that a geologist of exploration (economic geologist) knows the metalogenic provinces and the stratigraphic fertile horizons that are able to contain metals of economic interest. In addition, the economic evaluation of the mineralizations is the clue for carrying out studies of viability, demanded for mining companies. These studies determine, in last instance, the minimal cut-off grades that mineralizations must have for being a producing mine.

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

This matter has an eminently practical character, therefore the proposed activities are focused on the application of the acquired knowledge.For this reason, this knowledge acquired in lectures will complement each other with the practical

activities of laboratory and seminars, where the student will have to demonstrate his knowledge to identify and to characterize different types of deposits, to quantify their economic value and to determine if the exploitation is viable. The seminars will serve to explain and to prepare in group the economic evaluation of a deposit.

The monitoring of the learning process will be favoured through conventional tutoring and more specific tutoring related to the report that the students have to do in practical sessions. In addition, resource material will be uploaded on the Internet (https://moodel.unizar.es).

4.2.Learning tasks

Activity 1: Lectures: 28 hours

Activity 2: Laboratory session : 8 hours

Activity 3: Practice Sessions: 4 hours

Activity 4: Seminar: 4 hours

Activity 5: 1-day Field Trip (6 hours)

Activity 6: Exams (5 hours)

Activity 7: Autonomous work (70 hours)

Field practice could be coordinate with other subjects

4.3.Syllabus

Theoretical Program: Acquisition of the theoretical knowledge on mineral deposits, genesis and distribution patterns.

T1.- Introduction and important definitions and compilations. Classifications most usually used in mineral deposits.

T2.- Metallogeny through time: continental growth rates, crustal evolution and plate tectonics.

T3.- Divergent margins and metallogeny

T4.- Convergent margins and metallogeny

Practical Program: The attendance to practices is required.

1.- Identification of several mineral deposits with polarized microscopy.

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2.- Interpretation of simple geological maps for mineral exploration. Field techniques.

3.- Ore reserve calculation and economic viability estimations.

4.- Field practices

4.4.Course planning and calendar

This course is a **second** semester course. Classes will start the first academic week.
Students can refer to the Faculty of Sciences and Earth Sciences Department websites (https://ciencias.unizar.es; https://cienciastierra.unizar.es/) for timetable, classroom or assessment dates.
Further information regarding this course (examination, individual or group assignments...), will be provided on the first day of class.
Dates for each field trip will be published at the Earth Sciences Department website.

Tutorials: Office hours will be also provided the first day of class.

4.5.Bibliography and recommended resources

In support there is a Moodle course on this subject (http://moodle.unizar.es) with the sylabus of the classes, practical guides for seminars, field guide and the references used for each lesson.