Universitat Autònoma de Barcelona

2019/2020

Regional Geology Field Work

Code: 101038
ECTS Credits: 6

Degree	Type	Year	Semester
2500254 Geology	FB	1	2

Contact

Name: Enric Vicens Batet
Email: Enric.Vicens@uab.cat

Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

David Manuel Gómez Gras
Oriol Oms Llobet
Elena Druguet Tantiña
Carme Boix Martinez

Prerequisites

There are no prerequisites to take this course, although it is recommendable to have taken Basic Geology subject. The overlapping in timing between these two units has already been taken into consideration, and their contents have been duly synchronised.

Objectives and Contextualisation

The subject Regional Geology Field Work is the application of the subject Basic geology to the Catalonia area.

The objectives are adapted to the professional work requirements and based on real cases. These are:

- To acquire the basic theoretical notions of the geological units of Catalonia and its geological history.

- To learn the technical methodologies before the field work (documentation, etc.).

- To learn the fieldwork methodologies required in geology during the field trip (observations, annotations, deductions etc.)

- To learn methodologies required after the field trip (Integration of data, etc.)

- To study the main events in the geological history of Catalonia from the studied cases.

- To know the general context of the geology of the Iberian Plate.

Competences

- Display understanding of the fundamental principles of geology and the ability to identify the basic types of minerals, rocks and structures.
- Display understanding of the size of the space and time dimensions of Earth processes, on different scales.
- Evaluate moral and ethical problems in research and acknowledge the need to follow professional codes of conduct.
- Suitably transmit information, verbally, graphically and in writing, using modern information and communication technologies.
- Work in teams, developing the social skills needed for this.
- Work independently.

Learning Outcomes

1. Conduct individual fieldwork with honesty.
2. Describe the fundamental principles of Earth processes and their time and space scales.
3. Display ethical, socially-responsible behaviour during field trips.
4. Recognise in the laboratory and in the field the principal types of rocks and structures and the most common minerals.
5. Suitably transmit information, verbally, graphically and in writing, using modern information and communication technologies.
6. Work in teams, developing the social skills needed for this.
7. Work independently.

Content

Theory content:

The main morphostructural units in the Iberian Peninsula.

The morphostructural units in Catalonia.

The geological history of Catalonia

Land relief in Catalonia

Rocks in Catalonia

The geological resources of Catalonia

Theoretical aspects in regional geology fieldwork

Theoretical aspects of geological work before the field trip.

Theoretical aspects of geological work carried out during the field trip (acquisition of data, levels of observation, etc.)

Theoretical aspects of geological work after the field trip

Interaction between regional geology and local observations.

Practical content:

Identification of large morphostructural units

Identification of land relief

Identification of rocks and minerals

Identification of tectonic and sedimentary structures

Identification of geological processes

Identification of cross-cutting relationships

Identification of geological history

Methodology

There will be 5 field trips, each of 1 day:

Field trip 1:

Far de Sant Sebastià and Cala Pedrosa (contacts and criteria of relative chronology in Variscan intrusions in granitoids and rocks with contact metamorphism)

Aiguablava (leucogranites, fracture systems and lamprophyre veins)

Platja de Pals Illa Roja (the Cenozoic cover and its relationship with the Palaeozoic basement).

Field trip 2:

Boadella - Darnius area (the relationship between the cover and basement in the Pyrenees south side and the effects of the Alpine tectonics).

Sant Joan les Fonts (Neogene basalt lava flows)

Olot (pyroclastic deposits from Montsacopa volcano).

Field trip 3:

Collserola (Variscan igneous and intrusive rocks and view of the Barcelona plain).

Vallès-Penedès rift (Neogene distension, the example of the Neogene in the Vallès) and its limits (Riera de Sant Jaume - La Puda).

Field trip 4:

Montseny (Variscan rocks and peneplain and late Hercynian peneplain). El Brull and Pla de la Calma.

Ebro basin. The succession of Eocene sedimentary rocks in Tavertet. The evolution from marine to continental sediments and evaporites in Gurb (el Pont del Llop).

Field trip 5:

Bagà-Coll de Pal (Cadí thrust sheet).

Maçaners and Vallcebre (Pedraforca thrust sheets)

Berga (Pyrenean thrust front and conglomerates associated with Ebro basin limit).

Attending all the field trips is MANDATORY. Additionally, there will be lectures (8 hours) and seminars (8h) before and after the field trips. These sessions will complement certainaspects of the field trips.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			

Field work	35	1.4	3, 2, 1, 4, 7, 6
Lectures	8	0.32	2, 5
Seminars	8	0.32	2, 5, 6
Type: Supervised			
Dossiers and seminars	11	0.44	2, 7, 6
Type: Autonomous			
Processing field data	82	3.28	7, 6

Assessment

Assessment is based on:

- exams with questions relating to field trips, seminars and lectures,

- exercises during the field trips, and

- activities during the seminars.

The weighting given to each part is shown as a percentage in the corresponding assessment activities. Attitude and participation may also be assessed.

A minimum overall grade of 5 is required to pass the subject.

RE-ASSESSMENT: Students who fail to attain the grade of 5 will have to take re-assessment of the exams relating to the field trips. There is no re-assessment for the remaining activities.

This subject is based on the work Carried out in the field trips. For this reason, attending all the field trips is ABSOLUTELY MANDATORY. Students who do not attend all the field trips will be directly be awarded a fail grade for the subject. Attending the seminars is also mandatory.

All students registered on this subject (whether for the first time or not) are required to carry out the same activities (lectures, seminars and field trips) and will be subject to the same assessment criteria.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exams	65%	2	0.08	2, 1, 4, 5, 7
Exercises in the field	15%	0	0	3, 2, 1, 4, 5, 7, 6
Seminar	20%	4	0.16	2, 5, 7, 6

Bibliography

Roca, A., Miranda, J. (eds). 2010. Atles geològic de Catalunya. Institut Geològic de Catalunya, Institut Cartogràfic de Catalunya, Generalitat de Catalunya, Barcelona, 463 pp

Vera, J.A. (ed.). 2004. *Geología de España*. Sociedad Geológica de España e Instituto Geológico y Minero de España. pp. 884.

http://www.icgc.cat

http://www.igme.es

http://webs2002.uab.es/_c_gr_geocamp/geocamp/1024/index.htm