

Degree programme	Type	Course
Geology	OB	2

Contact lecturer

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Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

Although there is no official prerequisite, is very important to have followed the Stratigraphy subject (or at least to have a good knowledge on). This subject is scheduled in the first semester from the second course of the Geology degree.

Is also recommendable for students to have a good understanding of the contents of several subjects from the first course of the Geology degree such as: Fundamentals of Geology (Fundaments de Geologia) and Regional Geology field work (Treball de camp de Geologia Regional).

Objectives

- a) Acquisition of theoretical and practical concepts on the descriptive and analytical techniques common in sedimentology, which are closely linked to Stratigraphy.
- b) Interpretation of facies and its associations.
- c) Determination of facies sequences
- d) Identification of depositional environments on the basis of facies analysis

e) Adquisition of field skills on the use of concepts explained in the lessons.

The student has to apply in the field the contents of lectures. Fieldwork is a basic element of the subject to achieve: facies identification from several environments and paleogeographical reconstructions.

Learning outcomes

- CM07 (Evaluate areas with geological risk due to dense transport, through the analysis of maps and terrain data, justifying their assessments with appropriate technical criteria.) Evaluate areas with geological risk due to dense transport, through the analysis of maps and terrain data, justifying their assessments with appropriate technical criteria.
- KM07 (Explain the processes involved in the formation of sedimentary rocks.) Explain the processes involved in the formation of sedimentary rocks.
- KM08 (Define the external geological agents that modify the relief and physical geography of the Earth's surface.) Define the external geological agents that modify the relief and physical geography of the Earth's surface.
- KM09 (Describe the main sedimentary facies and the processes and environments where they are generated.) Describe the main sedimentary facies and the processes and environments where they are generated.
- SM08 (Solve problems related to the environmental impact of the alteration of river courses or the coastline.) Solve problems related to the environmental impact of the alteration of river courses or the coastline.

Contents

PROGRAM OF THEORETICAL LESSONS

-Introduction

-Fluvial facies

-Alluvial facies

-Deltaic facies

-Tidal facies

-Estuary and tidal flat facies

-Beach and barrier island facies

-Deep marine facies

-Eolian facies

-Lacustrine facies

-Carbonate facies

-Other facies

PROGRAMA DE CLASSES PRÀCTIQUES

- Performing and interpretation of stratigraphic sections from several environments.

FIELDWORK EXERCISES

During 2 field days the student will make a set of exercises and once are finished, the teacher will comment them.

The student has to be able of:

a) Recognition of sedimentary structures and materials which permit facies identification.

b) Sketching of geological cross sections, stratigraphic logs or schemes.

c) Identification of distinctive features of several environments

d) Paleoenvironmental characterization on the basis of these facies.

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Performance of a report on a particular issue	5	0.2	

Performance of a fieldwork report	9	0.36
Fieldwork	14	0.56
Study, report performance	76	3.04
Laboratory practices	12	0.48
Theoretical lessons	26	1.04
Group or individual mentoring	1	0.04

The subject of Sedimentology consists of three types of activities:

1.- Directed Activities

Theoretical lessons

- The contents will be taught mainly by the teacher in the form of master classes. The student acquires the scientific-technical knowledge of the subject attending the lectures and complementing them with the personal study of the explained topics. These sessions can be complemented with questions and simple exercises that are interrelated with the explanations. Part of the material used in class by the teacher will be available on the Virtual Campus of the subject.
- It is recommended that students regularly check books and recommended web links in order to consolidate, clarify and extend the contents explained in class. Laboratory practices Both field and laboratory practices will help facilitate understanding and consolidate the contents of the theory program.
- Students will have downloaded and printed the script of the practice, which they will deliver individually. This practical work involves the prior knowledge of the theory and the application of it in a practical example. Students must complete the document that will be delivered to the lecturer at the end of the session.

Field practices

- These consist of two days.
- In the course of the exit, exercises will be considered constantly to solve the outcrop. Special emphasis will be placed on the student being caring for and taking care of the field notebook, that is, in the compilation of data ordering in the field.

2.- Supervised activities

Some types of supervised activities can be proposed such as:

- a) Preparation of a fieldwork for groups on an outcrop that students will choose
- b) Presentation in class of the works on a given subject. Both the work and the presentation will be done in group
- c) Group and individual mentorings in order to support the training activities indicated above. A mentoring session

3.- Autonomous activities

This section includes the study, the elaboration of the works and the reading of bibliographic references.

For this subject it is allowed the use of artificial intelligence (AI) for support purposes such as bibliographic or information searching.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Final recovery test	95	0	0	CM07, KM07, KM09, SM08
Course contents in the final/partial tests	80	6	0.24	CM07, KM07, KM08, KM09, SM08

Score on the laboratory practices	15	0.5	0.02	KM07, KM08, KM09, SM08
Score on field work practices	5	0.5	0.02	CM07, KM07, KM08, KM09, SM08

1.- Theoretical part of the partial tests (80%) During the semester there will be two (or at most three) compulsory partial written tests on the theoretical content of the subject, which students will have to answer individually.

These tests will consist of a series of questions about the corresponding topics of the theory and practice program. Failed partial tests (grade less than 5) may be recovered in a final test on the date indicated in the general program of the course.

Students will be able to take their handwritten practices to the exam. It is expressly forbidden to have them printed from digital files (that is, written with a computer) 2.- Practical part of the partial test (15%) In the partial and final recovery test there will be questions about the contents worked on in the practices. Attendance to laboratory practices is mandatory; and at most it will be possible to justify the absence in 1 session. There will be partial tests on the practices carried out.

Students will be able to take their handwritten notes to the exam. It is expressly forbidden to have them printed from digital files (that is, written with a computer)

3.- Evaluation of field work (5%) The evaluation of the fieldwork will be based on individual tests on the work carried out in the field and may include: field exercise, assessment of field books and the attitude of the student during the trip. 4.- Final recovery test Fail partial theoretical tests (note less than 5) may be recovered in a final test on the date indicated in the general program of the course. No tests will be made outside the established days

ON THE SINGLE EVALUATION

The single evaluation will consist on a theoretical exam plus the practical work release. The score will be calculated in the same way as in the continuous evaluation.

Attendance at field trips and practices will be mandatory. Eventual field-trip exercises that are carried out during the excursion will be released before the trip finishes.

Students can take handwritten notes and practices

Bibliography

Basic references

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Arche, A. (2010). Sedimentología. el proceso físico a la cuenca sedimentaria. Ed. CSIC. ISBN: 978-84-00-09145-3

- Bogg, S. (2006).- Principles of Sedimentology and Stratigraphy, 4th ed., Pearson-Prentice Hall
- Bridge, J.S. (2004). Rivers and floodplains. Blackwell.491 pp
- Flügel, E. (2004). Microfacies of carbonate rocks. Springer. 916
- Davis, R.A. & Dalrymple, R.W. (2011). Principles of tidal sedimentology. Springer. 621 pp.
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- Nichols, G. (2009, 2020) Sedimentology & Stratigraphy. Blackwell Science.
- Levell, B.(2026). Reading's Sedimentary Environments. Processes, Facies and Stratigraphy. Wiley & Sons LtdISBN: 978-1-119-73983-8
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- Tucker, M. (ed.) (1988), Techniques in Sedimentology. Blackwell ScientificPublications.
- Vera, J. (1994) Estratigrafia (principios y métodos). Madrid: Rueda.

Links

<http://cit.iec.cat>

<http://www.lib.utexas.edu/>

<http://www.stratigraphy.org/>

<http://strata.geol.sc.edu/exerices/ExercisePrintOuts.html>

http://facstaff.gpc.edu/~pgore/geology/historical_lab/contents.php

<http://www.bib.ub.edu/recursos-informacio/guies-tematiques/geologia/#c4820>

Software

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Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TE) Theory	1	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	1	Catalan	second semester	morning-mixed
(PCAM) Field practices	1	Catalan	second semester	morning-mixed
(PCAMs) Suport a les	1	Catalan	second	morning-mixed

pràctiques de camp dirigides			semester	
(PLAB) Practical laboratories	2	Catalan	second semester	morning-mixed
(PCAM) Field practices	2	Catalan	second semester	morning-mixed
(PCAMs) Suport a les pràctiques de camp dirigides	2	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	3	Catalan	second semester	morning-mixed