

Geomorphology

Code: 104241
ECTS Credits: 6

2024/2025

Degree	Type	Year
2503710 Geography, Environmental Management and Spatial Planning	OB	2

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Teachers

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Teaching groups languages

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

Prerequisites

Have been enrolled and passed Introduction to Physical Geography in the first year. It will also be necessary to apply the knowledge provided by the Introduction to Cartography and Geographic Information Systems subjects.

Objectives and Contextualisation

- Recognize the forms and processes that give rise to the modeling of the earth's surface from deepening the kno
 - Identify geoforms at different scales.
 - Know the structural and climatic components of the relief.
 - Recognize and analyze the relief from the topographic map, photo inter
 - Get to know the geomorphology and genesis of the most relevant Catal
 - Properly carry out geomorphological cartography, geological sections a
 - Introduce the techniques of field and laboratory work in geomorphology

Learning Outcomes

1. CM16 (Competence) Carry out proposals and actions, based on field and desk work, focused on the prevention and management of geological risk.
2. KM21 (Knowledge) Describe the origin of the modelling of the earth's surface.
3. SM20 (Skill) Incorporate geomorphological cartography, geological sections and diagrams, understood as ideal models of explanation in geomorphology at a basic level, in a practical case.

Content

Theoretical contents:

1. Structural geomorphology

- 1.1. Little deformed sedimentary basin domain
- 1.2. Dominion of chains and young mountain ranges
- 1.3. Dominion of ancient mountain ranges
- 1.4. Relief in crystalline rocks
- 1.5. An interpretive framework. Models, morphostructural domains and ty
- 1.6. Private reliefs. Faulty and volcanic reliefs
- 1.7. Structural components of the relief in Catalonia

2. Climate geomorphology

- 2.1. From structure to climate, from relief to modeling
- 2.2. The action of ice
- 2.3. The action of water
- 2.4. Morphogenetic systems and morphoclimatic domains
- 2.5. The cold zone and the high mountain season
- 2.6. The temperate zone
- 2.7. The barren domains
- 2.8. The warm non-arid zone
- 2.9. Biostasis and Rexistasia
- 2.10. The climatic components of the relief in Catalonia
- 2.11. The relief under a system conception

Practical contents:

Field trips

- 1.1. Field trip 1
 - 1.1.1. Failed reliefs of the Prelittoral depression
 - 1.1.2. The Littoral and Prelittoral mountain range
 - 1.1.3. Principles of observing the structural relief
 - 1.1.4. Identification of rocks and analysis of outcrops
- 1.2. Field trip 2
 - 1.2.1. Tabular, slope and Jurassic reliefs around the plain of Vic
 - 1.2.2. Identification of the major forms: anticlinals, synclines, curves, clus
 - 1.2.3. Sedimentology, stratigraphy and upward and differential erosion
- 1.3. Field trip 3
 - 1.3.1. Montserratin molasses traffic reliefs
 - 1.3.2. Erosion as a construction of a relief: The formation of the needles,
 - 1.3.3. Deltas and paleochannels
 - 1.3.4. Natural risks and hazards related to geomorphology: Landslides, l
- 1.4. Field trip 4 (2 days)
 - 1.4.1. Volcanic reliefs, structural and modeling in the province of Girona
 - 1.4.2. Forms related to explosive and effusive volcanism
 - 1.4.3. The karst of the Banyoles lake
 - 1.4.4. Glacial, periglacial and snow modeling in the Eastern Pyrenees

2. Laboratory and cabinet practices

- 2.1. Identification of rocks
- 2.2. Photointerpretation
- 2.3. Geomorphological and geological cartography
- 2.4. Geological cuts

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theory and practice in the field	36	1.44	KM21, SM20
Theory and practice of Photointerpretation work, geomorphological cartography and geological sections	10	0.4	SM20
Type: Supervised			

Field work and computer and lab work	25	1	CM16, KM21, SM20
Type: Autonomous			
Reports and examinations preparation	75	3	CM16, KM21, SM20

The methodology of this subject is fundamentally practical, so the learning of geomorphology will be based on the

At the beginning of the course, the teacher will explain the protocol of measures and good practices for field trips. In a first phase, a couple of theoretical sessions will be held to set a framework. To support these main activities there is a set of notes and resources prepared. Finally, the laboratory practices and the reports of each field trip will be developed.

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	Weighting	Hours	ECTS	Learning Outcomes
Field notebook	10%	0	0	KM21
Report Field trip nº3	20%	0	0	CM16, KM21
Report of Field trip nº1	10%	0	0	SM20
Report of Field trip nº2	20%	0	0	KM21, SM20
Report of Field trip nº4	20%	0	0	CM16, KM21, SM20
Theoretical exam	20%	4	0.16	KM21

The assessment activities are divided into two large blocks: the reports + field notebook (80%) and the theoretical exam. In order to be evaluated, it is mandatory to have completed the trips, the reports and the theoretical exam. On carrying out each evaluation activity, lecturers will inform students (or

Field reports cannot be recovered by redoing them or making corrections, but they can be weighted averaged by the teacher.

Remember that work that reproduces all or a large part of another colleague's work is considered a "copy". "Plagiarism" is not allowed.

Note: This subject/module does not incorporate single assessment.

Bibliography

Notes of the subject (AMBRÓS, Sònia & DOMINGO, Montserrat)

Correig, Teresa Maria i Nogués, Joaquim M. (2020). *Guia De Punts D'Interès Geològic De Catalunya*. Cossetània Edicions.

Gutiérrez Elorza, Mateo (2001). *Geomorfología climática*, Barcelona: Omega.

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Miró, Manuel I Domingo, Montserrat (1985). *Breviario de Geomorfología*, Barcelona: Oikos-Tau.

Sabat, Francesc (2022). *Itineraris geològics per Catalunya*. Textos docents Universitat de Barcelona.

Strahler, Arthur N. & Strahler, Alan H. (2000) *Geografia Física*, Barcelona: Omega.

Tarbuck, Edward, Lutgens, Frederick (2005). *Ciencias de la Tierra. Una introducción a la Geología Física*, Madrid: Prentice Hall.

Vilaplana, Joan Manuel (1987). *Guia dels paisatges granítics dels Països Catalans*. Barcelona: Kapel.

Software

Reports and practices require the use of Geographical Information Systems, mainly for mapping.

The examples will be shown in QGIS, but you can use ArcGIS or Miramc

The use of digital graphic design tools such as Inkscape is recommended

The use of online mapping viewers will also be common.

Language list

Name	Group	Language	Semester	Turn
(PCAM) Field practices	11	Catalan	second semester	morning-mixed
(PCAM) Field practices	12	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	11	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	12	Catalan	second semester	morning-mixed
(TE) Theory	1	Catalan	second semester	morning-mixed