

**Geomorphology**

Code: 104241  
ECTS Credits: 6

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

## Contact

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## Teaching groups languages

You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

## 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

## Competences

- Critically analyse the relationship between society and the region applying the conceptual and theoretical framework of geography.
- Introduce theoretical and applied aspects of the main regional, environmental and urban policies in professional practice.

- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
- Work cooperatively in multidisciplinary teams.

## Learning Outcomes

1. Describe and interpret changes in landscape.
2. Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
3. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
4. Understand and interpret the main political direction in landscape management.
5. Work cooperatively in multidisciplinary teams.

## 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

## **Methodology**

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 frame.  
 To support these main activities there is a set of notes and resources posted on the course website.  
 Finally, the laboratory practices and the reports of each field trip will be done.

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.

## Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theory and practice in the field	40	1.6	4, 1, 3, 2, 5
Theory and practice of Photointerpretation work, geomorphological cartography and geological sections	10	0.4	1, 3, 2, 5
Type: Supervised			
Field work and computer and lab work	40	1.6	4, 1, 3, 2, 5
Type: Autonomous			
Reports and examinations preparation	40	1.6	1, 3, 2, 5

## Assessment

The assessment activities are divided into two large blocks: the reports + field notebook (80%) and the theoretical exam (20%).  
 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 their tutors) of the results.

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

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

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

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Field notebook	10%	2	0.08	1, 3
Report Field trip nº3	20%	4	0.16	1, 3, 2, 5
Report of Field trip nº1	10%	2	0.08	1, 3, 2, 5
Report of Field trip nº2	20%	4	0.16	1, 3, 2, 5
Report of Field trip nº4	20%	4	0.16	1, 3, 2, 5
Theoretical exam	20%	4	0.16	4, 1, 3, 2, 5

## 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.

Gutiérrez Elorza, Mateo (2008). *Geomorfología*, Madrid: Prentice Hall.

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) *Geografía 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.