Universitat Autònoma de Barcelona

2019/2020

Environmental Geology

Code: 105028
ECTS Credits: 3

Degree	Type	Year	Semester
2501915 Environmental Sciences	OT	4	0

Contact

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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

Elena Druguet Tantiña

Prerequisites

No prerequisite is requested.

Objectives and Contextualisation

The main objective of the subject is that students apply the knowledge of Geology to the development of models capable of predicting, preventing and / or mitigating environmental problems.
The course will focus on empowering students to evaluate and manage the consequences derived from anthropogenic interference in the geological environment:
-Geo-health: Materials harmful to health
- Savviness and use of geological heritage.
Also when empowering the student in the analysis of the dynamics of natural or anthropogenic geological processes that generate risk, to manage the minimization of these risks.
Finally, we want to give the student tools and geological criteria for the management of the territory.

Competences

- Adequately convey information verbally, written and graphic, including the use of new communication and information technologies.
- Analyze and use information critically.
- Collect, analyze and represent data and observations, both qualitative and quantitative, using secure adequate classroom, field and laboratory techniques
- Demonstrate adequate knowledge and use the most relevant environmental tools and concepts of biology, geology, chemistry, physics and chemical engineering.
- Demonstrate concern for quality and praxis.
- Demonstrate initiative and adapt to new situations and problems.
- Learn and apply in practice the knowledge acquired and to solve problems.
- Quickly apply the knowledge and skills in the various fields involved in environmental issues, providing innovative proposals.

- Teaming developing personal values regarding social skills and teamwork.
- Work autonomously

Learning Outcomes

1. Adequately convey information verbally, written and graphic, including the use of new communication and information technologies.
2. Analyze and use information critically.
3. Assess changes in geological media by natural or anthropogenic action and their level of degradation, and proposals for prevention and mitigation.
4. Compile inventories of geological heritage and geoconservation.
5. Demonstrate concern for quality and praxis.
6. Demonstrate initiative and adapt to new situations and problems.
7. Geological and geomorphological develop thematic maps for the management and environmental remediation and disclosure of geological heritage.
8. Identify the geological processes in the environmental surroundings and to value properly and originally.
9. Integrate the various terrestrial processes on a global scale and in terms of planetary evolution.
10. Interpret maps and geological sections developed by other authors.
11. Interpret over from different spatial scales in terms of geological risk and planning.
12. Knowing the interactions between the various layers or areas of the planet.
13. Learn and apply in practice the knowledge acquired and to solve problems.
14. Observe, recognize, analyze, measure and properly and safely represent geological processes.
15. Prepare and interpret maps and geological sections.
16. Recognize and interpret the forms of relief, and assess the evolution of the landscape.
17. Teaming developing personal values regarding social skills and teamwork.
18. Use concepts and tools of geology to solve environmental problems.
19. Work autonomously

Content

I. Introduction: geological risks
II. Geological materials harmful to health
III. Risks associated with external geological processes
IV. Risks associated with internal geological processes
V. Geoconservation and management

Methodology

The directed activities will consist of: master class of theory, practical activities in the classroom and a field trip.

Master class

Theoretical knowledge will be transmitted, mainly, in the classroom through master classes, with support of ICT and debates in a large group. Apart from the selected bibliography, students will have a diversified material for the follow-up of classes. These support materials will be available for students on the virtual campus of the subject and at the libraries. The theoretical knowledge acquired by the students will be evaluated through the written tests.

Practical activities in the classroom

The acquired knowledge will be applied to the practices and simple problems will be solved. Cases of different types of geological risks and their associated cartographies will be interpreted and analyzed.

Field practices

At the field trip the student must acquire a transversal and systemic knowledge of some of the problems

worked on the geological risks: recognition of the process, acquisition and validation of data in the field, cartography associated with the risk analyzed. The tasks will be carried out in a group.

The activities will be supported through tutorials in the classroom and at the teacher's office.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Field trip	7	0.28	2, 13, 3, 6, 5, 15, 4, 7, 8, 11, 10, 14, 16, 1, 19, 17, 18
Master class	13	0.52	2, 3, 12, 15, 4, 7, 8, 9, 11, 10, 14, 16, 1, 18
Practical classes	5	0.2	2, 13, 3, 15, 4, 7, 8, 11, 10, 14, 16, 1, 19, 17, 18
Type: Supervised			
Tutorials and follow-up activities proposed, face-to-face and virtually	15	0.6	2, 13, 3, 8, 14, 16, 1, 19
Type: Autonomous			
Problem solving, draft reports.	16	0.64	2, 13, 3, 15, 4, 7, 8, 9, 11, 10, 14, 16, 1, 19, 17, 18
Study of the subject of examination	16	0.64	2, 13, 3, 12, 6, 5, 15, 4, 7, 8, 9, 11, 10, 14, 16, 1, 18

Assessment

The assessment is carried out throughout the course on a continuous basis, partly in group and in part individually.

-Exam: in this part, the scientific-technical knowledge of the subject obtained by the student, as well as their capacity for analysis and synthesis, and critical reasoning, is evaluated individually. The evaluation of the theoretical contents and part of the practical part of the subject is carried out by means of a minimum of 2 written tests that are carried out throughout the course with a weight of 35% each. The contents will be eliminatory (subsequent tests do not include the contents of the previous ones). The qualification of this part is the sum of the two written tests, provided that the marks of each one exceed 4.

-Correction of practical activities in the classroom and in the field (30%): it will correspond to the delivery of the reports of practices resolved during the classroom practices.

To pass the course it is necessary that the average of the tests is approved and that the average of the practical activities is also approved.

When the mark of the continuous evaluation is less than 5, the final exam can be recovered the partial exams suspended.

To ask for a reevaluation the student must have been received a mark in activities that represent at least 2/3 of the global mark during the course.

The two partial tests that will be made jointly on the agreed date for coordination will be subject to recovery. In order to be able to present itself to the recovery it is necessary that the average mark of the continuous assessment corresponds to the reports of classroom and field activities; and of the autonomous course work is equal to or greater than 5.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
1st partial exam	35	1.5	0.06	2, 13, 3, 12, 6, 5, 15, 4, 7, 8, 11, 10, 14, 16, 1, 19, 17, 18
2nd partial exam	35	1.5	0.06	2, 13, 3, 12, 6, 5, 15, 4, 7, 8, 9, 11, 10, 14, 16, 1, 19, 17, 18
Reports of laboratory and field practices	30	0	0	2, 13, 3, 6, 5, 15, 4, 7, 8, 9, 11, 10, 14, 16, 1, 19, 17, 18

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