



Information about the subject

Degree: Bachelor of Degree in Marine Sciences

Faculty: Faculty of Veterinary Medicine and Experimental Sciences

Code: 271105 **Name:** Geology

Credits: 6,00 **ECTS Year:** 1 **Semester:** 2

Module: Fundamental Science

Subject Matter: Geology **Type:** Basic Formation

Field of knowledge: Sciences

Department: Basic and Cross-disciplinary Sciences

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

271A

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Module organization

Fundamental Science

Subject Matter	ECTS	Subject	ECTS	Year/semester
Physics	12,00	Fluid Mechanics	6,00	1/2
		Physics	6,00	1/1
Mathematics	6,00	Mathematics	6,00	1/1
Chemistry	12,00	Chemistry	6,00	1/1
		Chemistry of Aqueous Solutions	6,00	1/2
Biology	12,00	Biochemistry	6,00	1/2
		Biology	6,00	1/1
Geology	6,00	Geology	6,00	1/2

Recommended knowledge

Previous knowledge about Geology (level Spanish ESO/Bachillerato) and about how to make geographical maps. Spatio-temporal skills.



Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 The student knows and applies the Fundamental Principles of Geology in practical cases.
- R2 The student can search for bibliographic information and do some work on the Origin of the Universe, the Solar System, and the Earth.
- R3 The student knows the layers of the Earth (Atmosphere, Oceans and Lithosphere) and knows how to explain the appropriate methods to identify these layers.
- R4 The student knows how to apply laboratory techniques to identify the different types of rocks and minerals.
- R5 The student knows the external and internal geological processes. He/she is able to carry out a synthesis document on each type of process in a group and in computerised form.
- R6 The student is able to elaborate in computerised form and to present publicly a work carried out in group on one of the main continental sedimentary means.
- R7 The student is able to solve problems of topographic profiles and geological cuts.
- R8 The student has sufficient self-critical capacity to correct and evaluate his/her practical exercises of topographic profiles and geological cuts.



Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB1	Students acquire and understand knowledge in their field of study based on general secondary education but usually reaching a level that, although supported on advanced text books, also includes aspects involving state-of-the-art knowledge specific to their area.				X
CB2	Students are able to apply knowledge to their work in a professional way and have the competences enabling them to state and defend views and opinions as well as perform problem-solving tasks in their field of study.			X	
CB5	Students develop the necessary learning skills to undertake further studies with a high level of autonomy.			X	

GENERAL		Weighting			
		1	2	3	4
CG1	Capacity to analyze and synthesize				X
CG2	Capacity to organize and plan			X	
CG3	Mastering Spanish oral and written communication		X		
CG5	Knowing and applying Basic ITC skills related to marine science	X			
CG6	Capacity to manage information (capacity to look for and analyze information coming from different types of sources)			X	
CG7	Decision making		X		
CG8	Capacity to work in interdisciplinary and multidisciplinary team			X	
CG9	Interpersonal skills		X		



CG10	Critical and self-critical capacity				X
CG11	Capacity to learn				X
CG12	Capacity to adapt to new situations			X	
CG13	Capacity to produce new ideas (creativity)	X			
CG16	Capacity to apply theoretical knowledge				X

SPECIFIC	Weighting			
	1	2	3	4
CE8	Identifying and analyzing new problems and proposing solution strategies		X	
CE9	Knowing how to carry out experiments and measurements both in the laboratory and during sample collection	X		
CE11	Knowing how to do fieldwork and laboratory experiments in a safe and responsible way, promoting teamwork		X	



Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
	60,00%	Written test with theoretical and practical questions
	30,00%	Delivery of guided assignments, whose objectives and contents will be proposed by the teacher
	5,00%	Laboratory test
	5,00%	Oral presentation

Observations

According to the general evaluation and qualification regulations, the preferred evaluation system will be by means of continuous evaluation. There will be an initial evaluation of previous knowledge and a continuous evaluation in the directed work with exercises on the syllabus carried out in class. This subject cannot be assessed by means of a single assessment. Attendance to the practicals is compulsory.

The use of tools based on artificial intelligence (AI) is subject to the teacher's criteria, who may establish specific limits or conditions depending on the training or assessment activity.

MENTION OF DISTINCTION:

In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with 9 Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.



Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M1 Teacher presentation of contents, analysis of competences, explanation and in-class display of skills, abilities and knowledge.
- M2 Group work sessions supervised by the professor. Case studies, diagnostic tests, problems, field work, computer room, visits, data search, libraries, on-line, Internet, etc. Meaningful construction of knowledge through interaction and student activity.
- M3 Activities carried out in spaces with specialized equipment.
- M4 Supervised monographic sessions with shared participation.
- M5 Application of multidisciplinary knowledge.
- M6 Personalized and small group attention. Period of instruction and/or guidance carried out by a tutor to review and discuss materials and topics presented in classes, seminars, readings, papers, etc.
- M8 Set of oral and/or written tests used in initial, formative or additive assessment of the student.
- M9 Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc. to be presented or submitted in theoretical , practical and/or small-group tutoring sessions. Work done on the university e-learning platform (www.plataforma.ucv.es)
- M10 Student's study: Individual preparation of readings, essays, problem-solving, seminars, papers, reports, etc. to be presented or submitted in theoretical, practical and/or small-group tutoring sessions. Work done on the university e-learning platform (www.plataforma.ucv.es).



IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
ON-CAMPUS CLASS M1	R1, R2, R3, R5	37,00	1,48
PRACTICAL CLASSES M2	R7	9,00	0,36
LABORATORY M3	R4	5,00	0,20
SEMINAR M4	R6	2,00	0,08
GROUP PRESENTATION OF ASSIGNMENTS M5	R6	2,00	0,08
TUTORIAL M6	R2, R5, R6	3,00	0,12
ASSESSMENT M8	R1, R2, R3, R4, R5, R6, R7, R8	2,00	0,08
TOTAL		60,00	2,40

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
GROUP WORK M9	R5, R6	20,00	0,80
INDEPENDENT WORK M10	R1, R2, R3, R4, R7, R8	70,00	2,80
TOTAL		90,00	3,60



Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
UNIT 1- BASIC FUNDAMENTS	Fundamental Principles, Origin, evolution and internal structure of the Earth, atmospheric circulation, hydrological cycle.
UNIT II- GEOLOGICAL CYCLE	Geological cycle, magmatism, metamorphism, structural tectonics.
UNIT III- SEDIMENTARY MEDIA	Meteorization, transport, sedimentation and diagenesis. Fluvial systems. Groundwater. Glaciers. Arid zones. Dating.
UNIT IV- TOPOGRAPHY AND GEOLOGICAL CUTS	Topographic profiles and geological cuts, elements of a map. Scales. Topographic profiles. Direction and dip of a layer. Continuity and Discontinuity between layers. Geological cuts.

Organization of the practical activities:

	Content	Place	Hours
PR1.	Conducting geological histories.	Lecture room	4,00
PR2.	Identification of minerals and rocks.	Laboratory	2,00
PR3.	Geolocation of the most important continental and marine sedimentary environments of the planet.	Computer	4,00
PR4.	Carrying out maps and geological cuttings.	Lecture room	10,00



Temporary organization of learning:

Block of content	Number of sessions	Hours
UNIT 1- BASIC FUNDAMENTS	8,00	16,00
UNIT II- GEOLOGICAL CYCLE	7,00	14,00
UNIT III- SEDIMENTARY MEDIA	7,00	14,00
UNIT IV- TOPOGRAPHY AND GEOLOGICAL CUTS	8,00	16,00



References

- ANGUITA, F. Y MORENO, F. (1993). Procesos geológicos externos y geología ambiental. Madrid: Editorial Rueda.
- ARCHE, A. (Editor) (2010). Sedimentología. Del proceso físico a la cuenca sedimentaria. Serie Textos Universitarios, nº 46. Consejo Superior de Investigaciones Científicas. Madrid. 1287 págs
- BASTIDA, F. (2005). Geología una visión moderna de las Ciencias de la Tierra (Volúmenes 1 y 2). Editorial Trea. Gijón
- DE PEDRAZA GILZANZ, J. (1996). Geomorfología. Principios, métodos y aplicaciones. Madrid: Editorial Rueda.
- DEL ROSARIO RABADÁN, V. Y ROSSIS ALFONSO, R. (2018) La geología en 100 preguntas. Madrid: Nowtilus Saber.
- FLOR RODRÍGUEZ, G.S. (2004). Geología marina. Oviedo, El autor.
- MALTMAN, A. (1990). Geological Maps. An Introduction. Chichester: John Wiley & Sons.
- MARTÍNEZ TORRES, L.M.; RAMÓN LLUCH, R.; APRAIZ ATUTXA, A. (2016). Introducción a la Cartografía Geológica. Universidad del País Vasco. Servicio Editorial Euskal Herriko Unibertsitatea. Argitarapen Zerbitzua
- MELÉNDEZ, B. Y FUSTER, M. (1981). Geología. Madrid: Editorial Paraninfo.
- OROZCO, M.; AZAÑÓN, J. M.; AZOR, A. Y ALONSO-CHAVES, F. M. (2002). Geología Física. Madrid: Paraninfo.
- POZO RODRÍGUEZ, M.; GONZÁLEZ YEMOS, J. Y GINER ROBLES, J. (2003). Geología Práctica. Introducción al Reconocimiento de Materiales y Análisis de Mapas. Madrid: Prentice Hall.
- STRAHLER, A.N. (1987). Geología Física. Barcelona: Editorial Omega.
- STRAHLER, A.N. y STRAHLER, A.H. (1989). Geografía Física. Barcelona; Editorial Omega.
- TARBUCK, E. J. Y LUTGENS, F. K. (2000). Ciencias de la Tierra. Una introducción a la Geología Física. Madrid: Prentice Hall.
- VERA, J. A. (1994). Estratigrafía. Principios y Métodos. Madrid: Editorial Rueda.