



IDENTIFYING DATA

Geology: Geology

Subject	Geology: Geology			
Code	V02G030V01105			
Study programme	(*)Grao en Bioloxía			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Basic education	1st	1st
Teaching language	Spanish			
Department	Marine Geosciences and Territorial Planning			
Coordinator	Francés Pedraz, Guillermo			
Lecturers	Alejo Flores, Irene Francés Pedraz, Guillermo Gago Duport, Luís Carlos García Gil, María Soledad Pérez Arlucea, Marta María			
E-mail	gfrances@uvigo.es			
Web	http://fatic.uvigo.es/index.php?option=com_fatic_acceso_cursos			
General description	<p>In this matter, the basic functioning of the physical environment in which the current biosphere sits and develops is analysed. Because of that, the sedimentary environments (continental, coastal and marine) are studied from Actualism point of view. It allows laying the foundations for understanding the interaction of living beings with the environment in which they inhabit. From this point of view, the subject provides a primary and complementary knowledge of the concepts developed in other subjects, especially those related to Zoology, Botany and Ecology.</p> <p>Likewise, the introduction of the temporal dimension allows raising the basic questions about the origin and evolution of the Earth System in general, and of the biosphere in particular. These aspects will favour the understanding of the concepts related to biodiversity and organic evolution, as well as with the organisation and evolution of populations and ecosystems.</p> <p>Biology professionals, as well as other sciences, often develop their work in multidisciplinary teams, so the biologist must know the terminology and basic concepts of Geology that apply to different professional skills of these graduates. More specifically, professionals who develop their functions in the field of the environment, agricultural professionals, or those dedicated to information, documentation and dissemination should handle geological concepts that allow them to exchange information with other professionals, understand biological processes from a global point of view and make better decisions.</p> <p>A particular impact of Geology on the biologist's professional profile concerns teaching at the middle level. According to the structure and contents of entrance exams, future teachers must acquire knowledge and skills related to Geology</p>			

Competencies

Code	
A1	Students should prove understanding and knowledge in this study field that starts in the Secondary Education and with a level that, even though it is supported in advanced books, also includes some aspects that involve knowledge from the vanguard of the study field.
A2	Students should know how to apply their knowledge to their work or vocation in a professional way. They also should have the competences that are usually proved through the elaboration and defence of arguments and the resolution of problems within their study field.
A3	Students should prove ability for information-gathering and interpret important data (usually within their study field) to judge relevant social, scientific or ethical topics.
A4	Students should be able to communicate information, ideas, issues and solutions to all audiences (specialist and unskilled audience).
B2	Ability of reading and analyzing scientific papers and having critical assessment skills to understand data collection, deducing the main idea from the least relevant ones and basing on the corresponding conclusions.
B3	Acquisition of general knowledge about the basic subjects of biology, both at theory and experimental level, without dismissing a higher specialization in subjects that are oriented to a concrete professional area.
B4	Ability in handling experimental tools, both scientific and computer technology equipment that support the search for solutions to problems related to the basic knowledge of biology and with those of a concrete labour context.

B7	Collection of information about issues of biologic interest, analysis and emission of critical opinions and reason them including the reflection about social and/or ethical aspects related to the issue.
B10	Development of analytic and abstraction skills, the intuition and the logical and rigorous thought through the study of biology and its uses.
B11	Ability to communicate in detail and clearly: knowledge, methodology, ideas, issues and solutions to all audiences (not only qualified but unskilled in Biology).
B12	Ability to identify their own educational necessities in the biology field and in concrete labour areas and to organize their learning with a high grade of autonomy in any context.
C10	Analysing and assessing the adaptation of living beings to the environment.
C12	Cataloguing, mapping, assessing, preserving, restoring and managing natural and biological resources.
C15	Describing, analysing, evaluating and planning of the physical environmental. Intepreting the scenery.
C19	Identifying, addressing and communicating Agro-Food and environmental risks.
C25	Gathering background information, develop experimental work and analysing data results
C31	Knowing and handling technical and scientific apparatus.
C32	Knowing and handling basic or specific key concepts and terminology
C33	Understanding the social projection of Biology.
D1	Development of capacity of analysis and synthesis
D2	Acquisition of the organization and planning capacity for tasks and time
D3	Development of oral and writting communication abilities
D5	Use of computer resources related to the study field
D6	Research and interpreting of information from different sources
D7	Resolution of issues and decision making in an effective way
D8	Development of the ability of independent learning
D9	Ability to work in collaboration or creating groups with an interdisciplinary character
D10	Development of the critical thinking
D11	Adquisition of an ethical agreement with the society and the profession
D12	Respectful behaviour to diversity and multiculturalism
D13	Sensitivity for environmental issues
D14	Adquisition of abilities in the interpersonal relationships
D15	Development of creativity, initiative and enterpreneurial spirit
D16	Acceptance of a quaility commitment
D17	Development of the self-criticism ability
D18	Development of negotiating power

Learning outcomes

Expected results from this subject	Training and Learning Results			
To know the global functioning of the Earth system	A1	B2	C10	D1
	A2	B3	C12	D2
	A3	B7	C15	D3
		B10	C19	D6
		B11	C31	D7
			C32	D8
				D9
				D10
				D11
				D12
				D13
To know the rock's cycle	A1	B2	C10	D1
		B3	C12	D3
		B12	C19	D6
				D13
To understand the Global Tectonics theory.	A1	B2	C12	D1
	A2	B3	C15	D6
		B10	C19	D10
			C32	D14
				D17
				D18
To understand the Principles of the Geology.	A1	B2	C12	D1
	A2	B3	C15	D10
	A3	B7	C25	
		B10		
		B11		
		B12		

To know the historical dimension of Geology.	A1 A3	B2 B3 B7 B10 B11 B12	C12 C15 C25 C31	D1 D10
To understand the internal and external geological processes.	A1 A2 A3 A4	B2 B3 B4 B7 B10 B11 B12	C15 C19 C25 C31 C32	D1 D6 D10 D13
To know the fundamental types of rocks and their origin.	A1 A2	B2 B3	C12 C15 C25 C31	D6 D9 D10
To know the morphological and sedimentary characteristics of terrestrial, coastal and marine environments.	A2 A3 A4	B2 B3 B7 B10 B11 B12	C10 C12 C15 C31 C32 C33	D1 D2 D3 D6 D9 D10 D11 D13 D14 D15 D17 D18
To analyse and interpret the influence of the abiotic environmental factors on living beings.	A2 A3 A4	B2 B3 B7	C10 C15 C32 C33	D1 D6 D10 D11 D13 D14 D15 D17 D18
To apply knowledge and techniques from Geology to interpret the cartography.	A2	B3 B4 B10 B12	C12 C15 C19	D5 D7 D9
To obtain information, develop experiments and interpret the results in the field of Geology.	A2 A3	B3 B4 B10 B11	C19 C25 C31	D1 D2 D6 D8 D9 D10 D13 D16
To understand the usefulness of Geology and its impact on the biologist's professional practice.	A2 A3	B7 B11 B12	C10 C12 C15 C19 C33	D6 D9 D10 D13 D14 D15 D17 D18
To know and handle the concepts, terminology and scientific/technical instrumentation related to Geology.	A2 A3	B2 B7 B11 B12	C25 C32	D3 D6 D9 D16

Contents

Topic

1. Concept and Principles of Geology	Geology, a Earth science
	Historical and Physical Geology
	Principles of Geology

2. Coordenates in Geología	Spatial coordenates
	Geological time
3. The rocks cycle	Concept
	Classification of rocks and its relationship with the rocks cycle
	External cycle
	Internal cycle
4. The Atmosphere and the Hydrosphere	The Atmosphere: origin, composition, structure and dynamics.
	Ocean water and its dynamics.
	Continental waters: the Hydrological cycle
5. Continental environments	Glacial environment
	Dessert environment
	Alluvial systems
	Lacustrine environment
6. Coastal environments.	Coastal areas: agents and sedimentary processes.
	Erosive coasts.
	Coastal sedimentation: beaches, deltas, estuaries, tidal flats.
7. Marine and ocean regions.	Morphology and distribution of marine bottoms.
	Continental shelf. Reefs
	Deep-sea environments
8. Global Tectonics.	Continental drift
	Internal structure of the Eartha
	Seafloor spreading
	Plate Tectonics
9. Practice Sessions	Recognition of rocks and deformation structures.
	Geomorphology and sedimentary environments from South Galicia
	Concepts on cartography. Introduction to Geological maps.

Planning

	Class hours	Hours outside the classroom	Total hours
Introductory activities	0.5	1.5	2
Lecturing	30	48	78
Seminars	2	24	26
Field practice	7	0	7
Presentation	2	8	10
Laboratory practices	9	9	18
Practices report	1	0	1
Essay questions exam	4	4	8

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Introductory activities	Introduction to course: schedule, contents, practices, evaluation.
Lecturing	Presentations in the classroom on the concepts and fundamental contents of the subject. Student participation will be stimulated through questions, group resolution of exercises, etc.
Seminars	Writing of a report on a topic related to Geology that could be interesting for the student, preferably at his / her own initiative.
Field practice	Field-trip to recognize different types of rocks, tectonic structures and diverse sedimentary environments. Learn to use the geological compass. Writing an activity report.
Presentation	Oral presentation of the main contents of the report prepared in the seminars
Laboratory practices	Guided resolution of exercises on topography and basic geological cartography. Geological outcrops.

Personalized attention

Methodologies	Description
Lecturing	Resolution of doubts through personalized tutorials
Introductory activities	Resolution of doubts through personalized tutorials
Field practice	In situ instructions for the management of the geological compass, criteria for the recognition of rocks, identification of sedimentary environments in current sedimentary environments.
Laboratory practices	Explanation and advice for solving simple geological mapping exercises in small groups.

Seminars	Detailed instructions on how to write a report. Specialized databases sources. Advice on choosing a topic to develop. Resolution of doubts through individualized tutoring.
Presentation	Detailed instructions on how to organize an oral presentation and on the available resources. Resolution of doubts through personalized tutorials
Tests	Description
Practices report	Detailed instructions on the content and how to submit a report. Presentation of data through tables and figures. Search information in the net. Resolution of doubts through individualized tutoring.
Essay questions exam	Resolution of doubts through personalized tutorials

Assessment

	Description	Qualification	Training and Learning Results			
Lecturing	Attendance will be assessed. Random checks can be made.	5	A1 A2 B11	B3 B10 C15	C10 C12 C19 C32 C33	D2 D3 D10 D11 D16
Seminars	The written report on the subject developed by the student is evaluated. Content is valued, including additional documentation, presentation, graphics, diagrams, photographs, etc.	25	A2 A3 A4 B11 B12	B2 B7 B10	C10 C15 C32	D1 D2 D3 D5 D6 D8 D9 D10 D11 D13 D14 D16 D17 D18
Presentation	Items to evaluate: Structure and quality of the presentation. Adjust to the set time. Use of language with scientific rigor. Attitude during the presentation	15	A4	B11	C32	D3 D5 D9 D14
Laboratory practices	Attendance is obligatory	5	A1 A2 B10	B3 B4	C10 C12 C15 C19 C25 C31 C32 C33	D7 D10 D11 D16
Practices report	The written report on the activities carried out in the field practices is evaluated. Content, including graphics, diagrams, etc. is evaluated.	10	A3 A4 B11	B3 B4	C10 C15 C19 C25 C31 C32 C33	D1 D2 D3 D10 D11 D13 D14 D15 D16 D17 D18

Essay questions exam	Theoretical-practical exam on the fundamental contents of the subject.	40	A1 A2	B3 B4 B10	C10 C12 C15 C19 C32	D2 D3 D11 D16
Partial eliminatory exam: A partial examination of theoretical and practical nature will be carried out regarding the contents of the last lesson finalised to the date of the partial. Students who pass this exam will only have to examine the rest of the syllabus in the December/January session, although the partial value will not count in case of suspension in December/January. Students who do not pass the partial will be examined of all the contents in the December/January call or, eventually, in July.						

Other comments on the Evaluation

Attendance at classroom activities is mandatory. The final grade of students who miss more than 20% of the face-to-face activities without a duly justified cause, will be the result of multiplying by 0.5 the final score obtained.

To pass the subject is necessary to achieve a score at least equal to 40% of the valuation of each item in each of the valuable pieces. In case of not reaching 40% as mentioned earlier in any of the valuable items, the final grade will be equal to the final weighted average, multiplied by 0.5. For a student to be considered "Not Presented" he/she must not have been evaluated in any item.

A responsible and honest behaviour is required. It is estimated inadmissible any form of fraud (copy or plagiarism) aimed at distorting the level of knowledge and skills reached in any type of test, report or work. Copying in written probes or reports means obtaining zero points in the probe in which it was copied. Field reports with identical or very similar parts will also be evaluated with zero points.

There will be no possibility of repeating the group work or the field report, so in case of not reaching the required grade, the student will have to perform a specific written test on the July exam.

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First call examination date: 09/01/2018 (<http://bioloxia.uvigo.es/en/teaching/exams>). Remedial exam: as determined by the Faculty: <http://bioloxia.uvigo.es/en/teaching/exams>

Sources of information

Basic Bibliography

Pozo, M., González, J. y Giner, J., **Geología Práctica**, Pearson, 2004

Monroe, J.S., Wicander, R. y Pozo, M., **Geología. Dinámica y Evolución de la Tierra**, 4, Paraninfo, 2008

Tarback, E.D., Lutgens, F.K., Tasa, D., **Ciencias de la Tierra. Una introducción a la Geología Física**, 10, Pearson, 2013

Complementary Bibliography

Recommendations

Subjects that continue the syllabus

Biology: Soil, aquatic environment and climate/V02G030V01201

Biology: Basic field and remote sensing techniques/V02G030V01202

Subjects that are recommended to be taken simultaneously

Biology: Evolution/V02G030V01101