Teaching Guide				
Identifying Data				2022/23
Subject (*)	Geology		Code	610G02004
Study programme	Grao en Bioloxía			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	First	Basic training	6
Language	SpanishEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Física e Ciencias da Terra			
Coordinador	Grandal D`Anglade, Aurora	E-mail	aurora.grandal@udc.es	
Lecturers	Bao Casal, Roberto Blanco Calvo, Luis Alejandro Grandal D`Anglade, Aurora Sanjurjo Sanchez, Jorge Taboada Castro, Maria Teresa	E-mail	roberto.bao@udc.es alejandro.blancoc@udc.es aurora.grandal@udc.es jorge.sanjurjo.sanchez@udc.es teresa.taboada@udc.es	
Web				
General description	This subject aims to provide students with the knowledge of the physical environment that will be necessary for the development of their professional careers as biologists, as it constitutes the basis of ecosystems and biological communities. The contents are based on the study of the evolution of the planet, from its origin to the current configuration of the geosphere, atmosphere and hydrosphere, and the interactions between this evolution and the development of life on Earth.			

Study programme competences / results	
Code	Study programme competences / results
A6	Catalogar, avaliar e xestionar recursos naturais.
A22	Describir, analizar, avaliar e planificar o medio físico.
A30	Manexar adecuadamente instrumentación científica.
A31	Desenvolverse con seguridade nun laboratorio.
A32	Desenvolverse con seguridade no traballo de campo.
B4	Traballar de forma autónoma con iniciativa.
B5	Traballar en colaboración.
B6	Organizar e planificar o traballo.
B7	Comunicarse de maneira efectiva nunha contorna de traballo.
B8	Sintetizar a información.
B9	Formarse unha opinión propia.
B10	Exercer a crítica científica.
B13	Comportarse con ética e responsabilidade social como cidadán e como profesional.

Learning outcomes	
Learning outcomes	Study programme competences / results

To acquire basic knowledge about internal and external geological processes	A6 A22 A30 A31 A32	B4 B5 B6 B7 B8 B9 B10 B13	
To know the risks associated with geological processes	A6 A22 A31 A32	B4 B5 B6 B7 B8 B9 B10 B13	
To know the history of the Earth and within it the evolution of life and its relation to the great changes in the physical environment	A6 A22 A30 A31 A32	B4 B5 B6 B7 B8 B9 B10 B13	
To know the natural resources	A6 A22 A30 A31 A32	B4 B5 B6 B7 B8 B9 B10 B13	

Contents	
Topic	**Sub-topic**
I. The Formation of the Earth	1. Origin of the Earth 2. Earth structure: geochemical model 3. Structure of the Earth: dynamic model. Tectonic plates 4. Earth Dynamics: Earth's energy 5. Origin and evolution of the Hydrosphere. Origin and early evolution of the atmosphere
II. The rocks of the Earth	6. Magmatic rocks: plutonic and volcanic 7. The metamorphic rocks. Types of metamorphism. 8. Sedimentary rocks: detrital, chemical and biological.

III. Historical Geology	9. Stratigraphy and chronostratigraphy. The weather in Geology. Absolute and relative chronology. The geochronological scale. Eons, eras and periods. 10. The Archaic Eon. 11. The Proterozoic Eon 12. The Phanerozoic Eon I: the Paleozoic 13. The Phanerozoic Aeon II: the Mesozoic 14. The Phanerozoic Eon III: the Cenozoic
IV. Complementary Themes	15. Human paleontology 16. Climate change

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Oral presentation	A22 B8 B9	28	70	98
Seminar	A22 B4 B5 B6 B7 B8 B10	8	16	24
Field trip	A6 A22 A32 B8 B9	5	5	10
Laboratory practice	A22 A30 A31	10	5	15
Objective test	A22 B3 B4 B6 B8 B9 B10 B13	2	0	2
Personalized attention		1	0	1
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Oral presentation	Classroom lectures of 50 minutes. In the first hour of class we will explain the program of the subject and the teaching method to be used. The following hours will be dedicated to impart the theoretical contents of the program.
Seminar	Approach and resolution of problems and issues directly and indirectly related to the topics developed in the lectures, under the direction of the teacher.
Field trip	Study of outcrops of rocky bodies and their forms and interpretation of their genesis and representation. Study of present and fossil geological processes and forms of relief.
Laboratory practice	Development of the practical agenda with observations on selected material, use of classification criteria. Conceptual exercises.
Objective test	Exercise consisting of a list of questions about any content of the subject.

Personalized attention	
Methodologies	Description
Seminar Field trip Laboratory practice	The personalized attention in relation to these methodologies is conceived as moments of face-to-face work for students with the teacher, which implies a compulsory participation for the students. The form and the moment in which they will be developed will be indicated in relation to each activity throughout the course according to the work plan of the subject. The solution of practical problems in workshops will serve to verify and guide the contents of the subject and its assimilation by the students taking place in small groups. This monitoring can also take place in small groups during laboratory and field practices. Personalized attention can be carried out in a non-presential way through e-mail, Teams or the virtual campus. This non-presential modality will be developed mainly for students with part-time dedication or dispensation of assistance

Assessment

Methodologies	Competencies / Results	Description	Qualification
Seminar	A22 B4 B5 B6 B7 B8 B10	Continuous assessment of the ability to obtain, select, understand, process and summarize information.	10
Field trip	A6 A22 A32 B8 B9	The observations and attention will be evaluated, as well as the application of the knowledge when interpreting the observations by means of a Field Report.	10
Laboratory practice	A22 A30 A31	The evaluation will come from the assistance and performance of the practices as well as practical tests during the lab course.	10
Oral presentation	A22 B8 B9	Topics will be presented in the initial 40-45 minutes, and sessions will be finalized with interactive activities that promote the students' reflection about the contents presented. The evaluation will consist of a written test.	70

Assessment comments

Attendance at 80% of all scheduled
activities is mandatory.
To pass the course a minimum of 4.5 points is required in all
activities and an average mark of 5 out of 10.
To qualify as a non-applicant (NP), it is sufficient not to take the regular final
exam.
Those who do not pass the course by means of continuous assessment activities must
carry out the same type of activities autonomously, although under the
supervision of the teaching staff.
Both in the final
exam and in the second opportunity
in July, the grades of the activities passed previously will be maintained
and only those not passed will have to be evaluated.
- The evaluation of the theoretical
contents (including geochronological scale) will be carried out by means of
a written examination, in person or by telematic means if necessary.
- The test of contents of the work in small group will consist of the resolution of a question
similar to those formulated during the course by means of the use of
bibliographic databases (Web of Science).
- The evaluation of the laboratory
work will consist of the delivery of
a work on rock recognition
- The evaluation of the field
activity will consist of the delivery of a bibliographic work on the
geological aspects of the study area chosen this course.
Part-time or waived
attendance students. These students must compensate for non-attendance to
activities through the same system described.

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Students from previous years who sit for the December exams will be examined according to the instructions given in the teaching guide for the course 2021-22. Any exam, assignment, etc. in which plagiarism is detected will receive a grade of zero.

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Those who do not pass the course by means of continuous assessment activities must carry out the same type of activities autonomously, although under the supervision of the teaching staff.
Both in the final exam and in the second opportunity in July, the grades of the activities passed previously will be maintained and only those not passed will have to be evaluated.
- The evaluation of the theoretical contents (including geochronological scale) will be carried out by means of a written examination, in person or by telematic means if necessary.
- The test of contents of the work in small group will consist of the resolution of a question similar to those formulated during the course by means of the use of bibliographic databases (Web of Science).
- The evaluation of the laboratory work will consist of the delivery of a work on rock recognition
- The evaluation of the field activity will consist of the delivery of a bibliographic work on the geological aspects of the study area chosen this course.
Part-time or waived attendance students. These students must compensate for non-attendance to activities through the same system described.

Sources of information	
Basic	Recomendaranse textos durante o curso a medida que se necesiten durante a explicación teórica. Os textos recomendados son os que traten o tema de Xeoloxía xeral existentes na biblioteca da Facultade de Ciencias. Tratarase de proporcionar información específica sobre temas concretos durante a exposición teórica ben nas clases maxistrais ben nos grupos reducidos.os textos principais son:?Skinner B. & Porter S. THe Dynamic Earth. An introduction to physical geology. X-440?Hamblin & Christiansen. Earth?s Dymamic Systems. X-447 and X-860?Wicander & Monroe. Historical Geology. X-330 -333?Wicander & Monroe. The changing Earth. X-366 ?Cowen. History of Life. X-132 - 135?Levin. The Earth through time. X-850 ? 852?Mazen. The story of Earth. The first 4.5 billion years, from stardust to living planet X-37?Prothero. The story of the Earth in 25 rocks : tales of important geological puzzles and the people who solved them X-39 ?Anguita & Moreno. Procesos geológicos internos. X-27?Anguita. Origen e Historia de la Tierra. X-32?Tarbuck & Lutgens. Ciencias de la Tierra : Una Introducción a la Geología Física. X-808 - 810?Mediavilla. La historia de la Tierra. X-792 -793
Complementary	http://ocw.innova.uned.es/cartografia/indice_general.htm (Página sobre prácticas de Cartografía geológica de la UNED)

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Physical Geography/610G02006 Paleobiology/610G02043
Other comments
Green Campus program, Faculty of ScienceIn order to help achieve an immediate sustainable environment and comply with point 6 of the "Environmental Declaration of the Faculty of Science (2020)", the documentary work carried out in this area:a. They will be requested mainly in virtual format and computer support.b. If on paper:- No plastics shall be used.- Double-sided printing shall be used.- Recycled paper shall be used.- The use of drafts will be avoided.A large part of the contents of the subject are directly related to sustainability: the study of energy sources, geological risks, climate change over time and its impact on living beings. The aim is to raise awareness among first-year students of the need to behave responsibly and be committed to sustainability in the faculty itself and in their personal life.