



IDENTIFYING DATA

Geological Processes in Continental Margins and Ocean Basins

Subject	Geological Processes in Continental Margins and Ocean Basins			
Code	V10M153V01104			
Study programme	(*)Máster Universitario en Oceanografía			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	5	Mandatory	1st	1st
Teaching language	Spanish			
Department				
Coordinator	Bernabéu Tello, Ana María			
Lecturers	Bernabéu Tello, Ana María Mena Rodríguez, Ángel Mohamed Falcón, Kais Jacob Nombela Castaño, Miguel Angel			
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Web	http://masteroceanografia.com			
General description	<p>This subject tackles the knowledge of the geological processes that take place in the marine field from the line of coast until the abyssal plain. They will analyse the processes of transport and sedimentation that control the movement of sediment and the sedimentary structures resultant in the different marine environments. Also it tackles the study of post-sedimentary processes like the diagenesis of sediments, or the ichnology or trace left by the activity of the organisms in the sedimentary record.</p> <p>The practical content of the subject will suppose a fieldtrip of several days of length to see different fossil sedimentary environments . It proposes visit the neogene basins of Sorbas; Nijar and Tabernas in the province of Almería.</p>			

Competencies

Code	
A3	Students who have the ability to integrate knowledge and handle complexity, and formulate judgments with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments
A4	Students who can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and nonspecialist audiences clearly and unambiguously
B1	The students will understand in a detailed and based form the theoretical and practical aspects and the work methodology of the oceanography
B5	The students will be able to develop the sufficient autonomy to participate in research projects and scientific collaborations, especially in interdisciplinary contexts
C3	The students will analyse situations and specific oceanographic conditions related with the global change
C4	The students will be able to apply in the practice the obtained knowledge and issue resolutions and judgments in the different oceanography fields
D1	The students will know and will be able to apply the scientific method in the academic and research fields.
D3	The students will be able to communicate the obtained information and their conclusions in a effective way to the general public, to other scientists and to the competent authorities, listening and answering of effective form and, using an appropriate language to the audience and to the context

Learning outcomes

Expected results from this subject	Training and Learning Results
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Capacity to interpret seismic profiles. Recognise inside the context of the sequential stratigraphy the sedimentary courtships and his relation with the eustatic stages.	A3 B1 B5 C3 C4 D1 D3
Capacity for the integration of data and interpretation of the physical and geological processes in oceanic environments.	A3 B1 B5 C3 C4 D1 D3
Capacity for the recognition and interpretation of sequences and cycles.	A3 B1 C3 C4 D1
Capacity to identify the sedimentary environments, their processes associated and the factors that have controlled their spatio-temporal evolution.	A3 B1 C3 C4 D1
Capacity to evaluate the economic potential of the oceanic basins with regard to diverse geological resources.	A3 A4 B1 C4 D1 D3

Contents

Topic

PROGRAM OF THEORY

Subject 1: Tectonic configuration and geomorphology of the oceanic bottom

Subject 2: Origin and distribution of marine sediments

Subject 3: Transport of sediments in coastal environments and continental shelf

Subject 4: Continental shelf

Subject 5: Gravitational processes in the continental slope and abyssal plain

Subject 6: Currents of outline and contourites

Subject 7: Hydrothermalism

Subject 8: Ichnology in marine sedimentary environments

Subject 9: Diagenesis in marine sediments

Subject 10: Marine mineral resources

PROGRAM OF PRACTICES

SUBJECT P1: Identification of marine sedimentary environments P1.1. Environments in carbonate platforms: internal platform and reefs

P1.2. Turbiditic environments

P1.3. Pelagic environments

P1.4. Evaporitic environments

SUBJECT P2: Sedimentary basins filling P2.1. Factors of control

P2.2. Spatio-temporal evolution

Planning

	Class hours	Hours outside the classroom	Total hours
Master Session	25	35	60
Outdoor study / field practices	20	0	20

Presentations / exhibitions	3	0	3
Tutored works	2	0	2
Reports / memories of practice	0	15	15
Jobs and projects	0	25	25

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

Methodologies	
	Description
Master Session	It consists in the exhibition of contents by part of the professor, analysis of competitions, explanation and demonstration of capacities, skills and knowledges in the classroom, using like methodology the participatory masterclass and in which the function of the professor is to explain the theoretical foundations of the matter.
Outdoor study / field practices	Session of work *grupal in practices of field, under the supervision of the professor, making possible the significant construction of the knowledge through the interaction and activity of the student and his contact with the reality where has to apply his knowledges. It will do a route by the outcrops *Neógenos of several basins *sedimentarias of the *sureste peninsular in which there is glorious examples of half *sedimentarios marine fossils, that include platforms *carbonatadas, *turbiditas, *evaporitas, reefs, *sedimentación *pelágica, etc.
Presentations / exhibitions	Realisation and individual exhibition on a subject of the *asignatura. The professor presents the aims, orients and *tutoriza the work, with participation shared with the students. This methodology carries implicit a load of work no face-to-face significantly upper to the activities signalled previously.
Tutored works	Sessions of work in group oriented by the professor, whose purpose is the research of data or information in libraries, databases, Internet, etc.

Personalized attention

Methodologies	Description
Master Session	Schedule of tutorial: Prof. Ana Bernabeu: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours Prof. Kais Mohamed: Tuesday and Friday of 12:00 to 14:00 hours and Thursday of 14:00 to 16:00 hours Prof. Miguel Nombela: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours Prof. Anxo Mena: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours
Outdoor study / field practices	Schedule of tutorial: Prof. Ana Bernabeu: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours Prof. Kais Mohamed: Tuesday and Friday of 12:00 to 14:00 hours and Thursday of 14:00 to 16:00 hours Prof. Miguel Nombela: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours Prof. Anxo Mena: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours
Tutored works	Schedule of tutorial: Prof. Ana Bernabeu: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours Prof. Kais Mohamed: Tuesday and Friday of 12:00 to 14:00 hours and Thursday of 14:00 to 16:00 hours Prof. Miguel Nombela: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours Prof. Anxo Mena: Monday, Tuesday and Wednesday of 12:00 to 14:00 hours

Assessment

	Description	Qualification	Training and Learning Results			
Presentations / exhibitions	It will evaluate the document written and the oral presentation of the work developed by the student in a subject related with the matter.	40	A3 A4	B1 B5	C3 C4	D1 D3
Reports / memories of practice	They will evaluate the reports of field elaborated by the student in relation to the exit of field in the outcrops *Neógenos of basins *sedimentarias situated in the peninsular	40	A3 A4	B1 B5	C4 D3	D1 D3
Jobs and projects	It will evaluate the capacity of analysis and synthesis on the subject chosen, as well as the participation during the discussion of the works.	20	A3 A4	B5	C4	D1 D3

Other comments on the Evaluation

Sources of information

Arche, A. (ed.), **Sedimentología**,
 Chiocci, F.L. y Chivas, A.R. (eds.), **Continental Shelves of the World**,
 Huneke, H. y Mulder, T., **Deep-sea sediments**,
 Rebesco, M. and Camerlenghi, A. (eds.), **Contourites**,
 Nittrouer, C.; Austin, J.; Field, M.; Kravitz, J.; Syvitski, J.; Wiberg, P. (eds.), **Continental margin sedimentation: from sediment transport to sequence stratigraphy**,
 Mather, A., **A Field guide to the neogene sedimentary basins of the Almería province, SE Spain**,
 Braga, J.C. et al., **Geología del Entorno Árido Almeriense. Guía Didáctica de Campo**,
 CIESM Workshop, **The Messinian Salinity Crisis from mega-deposits to microbiology. A consensus report**,

Recommendations

Subjects that it is recommended to have taken before

Geological Oceanography/V10M153V01CF104

Other comments

For those students that have not graduated in Marine Science or in Geology is fundamental to have studied the subject of Geological Oceanography.
