



## Information about the subject

**Degree:** Bachelor of Degree in Marine Sciences

**Faculty:** Faculty of Veterinary Medicine and Experimental Sciences

**Code:** 272007 **Name:** Sedimentology

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

**Module:** Transversal Knowledge and Techniques in Marine Sciences

**Subject Matter:** Marine Geology **Type:** Compulsory

**Department:** Oceanography and Environment

**Type of learning:** Classroom-based learning

**Languages in which it is taught:** Spanish

### Lecturer/-s:

272A

Ana María Blázquez Morilla (**Responsible Lecturer**)

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## Module organization

### Transversal Knowledge and Techniques in Marine Sciences

Subject Matter	ECTS	Subject	ECTS	Year/semester
Organisms and Systems	30,00	Marine Botany	6,00	2/2
		Marine Ecology	6,00	3/2
		Marine Microbiology	6,00	2/2
		Marine Zoology	6,00	2/1
		Physiology of Marine Organisms	6,00	2/2
Marine Geology	12,00	Geophysics and Tectonics	6,00	2/1
		Sedimentology	6,00	2/2
Geographic Information Systems and Remote Sensing	6,00	Geographic Information Systems and Remote Sensing	6,00	2/1
Statistics	6,00	Applied Statistics	6,00	2/1



## 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 samples sediments on the coast and performs textural and compositional analysis of them.
- R2      The student performs the morphodynamic study of a current duna-beach system by monitoring its topographical changes and the characteristics of the sediment.
- R3      The student elaborates a cartography of sedimentary units and their recent evolution, from interpretation of aerial photographs with stereoscopic vision.
- R4      The student knows the main classifications of sediments following different criteria.
- R5      The student knows the basic concepts for the identification and classification of sedimentary basins and environments.



## 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
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	
CG6	Capacity to manage information (capacity to look for and analyze information coming from different types of sources)			X	
CG8	Capacity to work in interdisciplinary and multidisciplinary team			X	
CG10	Critical and self-critical capacity			X	
CG11	Capacity to learn				X
CG16	Capacity to apply theoretical knowledge				X
CG18	Sensibility to environmental issues.			X	



SPECIFIC	Weighting			
	1	2	3	4
CE2 Knowing basic sampling techniques of water column, organisms, sediment and sea-bottoms as well as basic techniques of dynamic and structural variable measurement				X
CE6 Applying marine instrument techniques			X	
CE7 Collecting, assessing, processing and interpreting oceanographic data, following the most recent theories				X
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
CE10 Knowing how to use planning, designing and implementing research tools while surveying and assessing results			X	
CE11 Knowing how to do fieldwork and laboratory experiments in a safe and responsible way, promoting teamwork			X	
CE12 Describing, classifying and mapping sea bottoms and coastal areas				X
CE22 Practical experience of methods of marine environmental impact assessment			X	



## Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R4, R5	50,00%	Written test with theoretical and practical questions
R2, R3	30,00%	Delivery of guided assignments, whose objectives and contents will be proposed by the teacher
R1	10,00%	Laboratory test
R3, R4	10,00%	Oral presentation

### Observations

Minimum 50% in each item to average with the rest.

### MENTION OF DISTINCTION:

According to Article 22 of the Regulations governing the Evaluation and Qualification of UCV Courses, the mention of "Distinction of Honor" may be awarded by the professor responsible for the course to students who have obtained, at least, the qualification of 9 over 10 ("Sobresaliente"). The number of "Distinction of Honor" mentions that may be awarded may not exceed five percent of the number of students included in the same official record, unless this number is lower than 20, in which case only one "Distinction of Honor" may be awarded.

## 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](http://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](http://www.plataforma.ucv.es) ).



## IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
ON-CAMPUS CLASS M1	R4, R5	33,00	1,32
PRACTICAL CLASSES M2	R2, R3	11,00	0,44
LABORATORY M3	R1	5,00	0,20
SEMINAR M4	R4, R5	3,00	0,12
GROUP PRESENTATION OF ASSIGNMENTS M5	R3, R4, R5	3,00	0,12
TUTORIAL M6	R1, R2, R3, R4, R5	3,00	0,12
ASSESSMENT M8	R3, R4, R5	2,00	0,08
<b>TOTAL</b>		<b>60,00</b>	<b>2,40</b>

## LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
GROUP WORK M9	R1, R2, R3, R4, R5	18,00	0,72
INDEPENDENT WORK M10	R1, R2, R3, R4	72,00	2,88
<b>TOTAL</b>		<b>90,00</b>	<b>3,60</b>





## Description of the contents

Description of the necessary contents to acquire the learning outcomes.

### Theoretical contents:

Content block	Contents
DIDACTIC UNIT I: SEDIMENTS.	Definition. Texture and composition parameters in composition analysis. Classification of sediments in littoral and marine environments based on their origin.
DIDACTIC UNIT II: MARINE AND COASTAL SEDIMENTARY ENVIRONMENTS.	Definitions. Analysis of the sediments of the continental shelf, slope and abyssal depths. Morphologic and sedimentary studies of coastal dunes, beaches, spits, estuaries, marshes, estuaries, deltas, fjords, systems-barrier island / lagoon, coral, etc.
DIDACTIC UNIT III: CONTINENTAL SEDIMENTARY ENVIRONMENTS.	Definitions. Classifications of continental environments: alluvial, glacier, desert, lacustrine, palustrine, marsh, fluvial, Main features of the continental sedimentary environments.
DIDACTIC UNIT IV: STRATIGRAPHY OF LITTORAL SEDIMENTARY ENVIRONMENTS.	Basic stratigraphic principles, series, sequences and rhythms. Stratigraphic discontinuities. Sedimentary structures



## Organization of the practical activities:

	Content	Place	Hours
PR1.	LABORATORY PRACTICES. Grain size and chemical analysis of the sedimentary samples. Interpretation of sedimentary curves, histograms and textural diagrams.	Laboratory	5,00
PR2.	CLASSROOM PRACTICES: photo-interpretation of stereoscopic pairs from different coastal forms.	Lecture room	11,00
PR3.	PRACTICE. EXCURSION. Objective: To recognize ways in coastal mapped in classroom practices. Coastal sediment sampling	Field visit	7,00

## Temporary organization of learning:

Block of content	Number of sessions	Hours
DIDACTIC UNIT I: SEDIMENTS.	8,00	16,00
DIDACTIC UNIT II: MARINE AND COASTAL SEDIMENTARY ENVIRONMENTS.	14,00	28,00
DIDACTIC UNIT III: CONTINENTAL SEDIMENTARY ENVIRONMENTS.	6,00	12,00
DIDACTIC UNIT IV: STRATIGRAPHY OF LITTORAL SEDIMENTARY ENVIRONMENTS.	2,00	4,00



## References

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- BRIDGE, J.S. 2004. Rivers and floodplains. Blackwell. 491 pp
- DAVIS, R.A., DALRYMPLE, R.W., 2011. Principles of tidal sedimentology. Springer. 621 pp.
- DE ANDRÉS, J. R., GRACIA F. J. (Eds.), 2000. Geomorfología Litoral. Procesos Activos. Madrid: Editorial ITGE.
- FLOR, G., 2004. Geología Marina. Oviedo: Universidad de Oviedo.
- FLÜGEL, E., 2004. Microfacies of carbonate rocks. Springer. 916
- GUTIÉRREZ ELORZA, M., 2001. Geomorfología climática. Omega. 642 p
- GUTIÉRREZ ELORZA, M., 2008. Geomorfología. Pearson. 898 p.
- JAMES, N.P., DALRYMPLE, R.W., 2010. Facies models, 4. Geotext. 6. Geological Association of Canada
- KOMAR, P. D., 1988. Beach Processes and Sedimentation. Prentice Hall.
- NICHOLS, G., 2009. Sedimentology and Stratigraphy. Blackwell Science.
- SANJAUME, E., 1985. Las costas valencianas. Sedimentología y Morfología. Valencia: Universidad de Valencia.
- SHORT, A. D. (Ed.), 1999. Handbook of Beach and Shoreface Morphodynamics. Chichester: John Wiley & Sons.
- WOODROFFE, C. D., 2003. Coasts. Form, Process and Evolution. Cambridge University Press.



## Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

**Situation 1: Teaching without limited capacity** (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

**Situation 2: Teaching with limited capacity** (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

### 1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

☒ Microsoft Teams

☒ Kaltura



## **Situation 3: Confinement due to a new State of Alarm.**

In this case, the following changes are made:

### **1. Educational Activities of Onsite Work:**

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

☒ Microsoft Teams

☒ Kaltura

Explanation about the practical sessions:

In the case of a new state of alarm, technical visits to the bay of Javea and laboratory practices will be moved to new dates, as soon as the health situation allows. As a non-face-to-face alternative, they will be replaced by virtual visits through Google Earth and by video-tutorials on the techniques to be used. The analysis and interpretation will be carried out from data obtained in previous years, which will be provided by the teacher.



## 2. System for Assessing the Acquisition of the competences and Assessment System

### ONSITE WORK

#### Regarding the Assessment Tools:

☒ The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

☐ The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

#### Comments to the Assessment System: