



IDENTIFYING DATA

Design and Carrying out of Oceanographic Campaigns

Subject	Design and Carrying out of Oceanographic Campaigns			
Code	V10M153V01301			
Study programme	Máster Universitario en Oceanografía			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	5	Mandatory	1st	An
Teaching language	Spanish			
Department				
Coordinator	Nombela Castaño, Miguel Angel			
Lecturers	Alejo Flores, Irene Nombela Castaño, Miguel Angel Ramil Blanco, Francisco José Roson Porto, Gabriel Varela Benvenuto, Ramiro Alberto Vázquez Otero, María Elsa			
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General description	<p>The subject "Design and realisation of oceanographic campaigns" will give from the 4 areas of knowledge, where each one they contributes his own methodology. The high cost of the Oceanographic Research does that the oceanographic campaigns have to be necessarily interdisciplinaries, and his design and execution has to realise from the perspective of the optimisation of the available resources. The subject includes the realisation of an oceanographic campaign, whose length will depend on the budgetary availability and of oceanographic ships. It considers a minimum time of ship of 2 days by student to be able to assimilate the distinct methodologies of sampling, taking of data and usual instrumental techniques in Oceanography.</p> <p>This subject will give with annual character, so that it allow a flexible design in function of the availability of oceanographic vessels. Inside his planning considered the possibility that the students can ship in other campaigns of opportunity that realise researchers and that they can offer available squares for teaching.</p>			

Training and Learning Results

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
A5	Students who have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.
B1	The students will understand in a detailed and based form the theoretical and practical aspects and the work methodology of the oceanography
B4	The students will be able to analyse oceanographic databases and obtain skills for their treatment.
C2	The students will be able to schedule, design and execute original applied investigations from the stage of recognition until the evaluation of results and discoveries.
C4	The students will be able to apply in the practice the obtained knowledge and issue resolutions and judgments in the different oceanography fields
D2	The students will possess the handle skills in the laboratory that allow them to develop autonomous work.
D4	The students will be able to understand the need and obligation to perform a continuous training, to a large extent autonomous, for the scientific development, updating the knowledges, skills and attitudes of the professional competences along the life.

Expected results from this subject

Expected results from this subject	Training and Learning Results
Realise a complete route by the methodology of the oceanographic discipline, from the planning of the campaign, the obtaining of data in situ on board of the Oceanographic Vessel going through the learning of the treatment and presentation of the oceanographic results.	A3 A5 B1 B4 C2 C4 D2 D4

Contents

Topic	
Design of the oceanographic campaign.	Adjusting the aims to the technical characteristic of the Oceanographic Vessel (O.V.) Configuration of the O.V. to reach the aims. Calculation of time in traffics and in stations.
Execution of the oceanographic campaign.	Management of the human resources. Management of the technical equipments. Management of the time.
Broadcast of reports of oceanographic campaigns.	Structure. Contents. Incidents.
Handling oceanographic equipment of data acquisition	Direct: samplings in the water column and in the bottom. Indirect: in the water column and in the bottom.
Treatment of oceanographic data.	Handling of acquisition software and of oceanographic data.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	5	7.5	12.5
Laboratory practical	15	18.75	33.75
Studies excursion	25	37.5	62.5
Presentation	3	10.75	13.75
Seminars	2	0.5	2.5

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

Methodologies

	Description
Lecturing	The basic concepts related to the design and realization of oceanographic campaigns will be presented by the professor.
Laboratory practical	The students will become familiar with the laboratory techniques for the preparation of the samples collected in the oceanographic campaign before their analysis, with the use of oceanographic data acquisition and treatment software. Attendance is compulsory.
Studies excursion	A campaign will be made on board an Oceanographic Vessel to become familiar with the use of the different data acquisition equipment both in the water column and in the substrate. Attendance is compulsory.
Presentation	With the information collected in the campaign at a Oceanographic vessel, the students will have to make the report of the campaign and expose it in the class.
Seminars	There will be tutorials in small groups where students can ask questions and answer questions.

Personalized assistance

Methodologies	Description
Lecturing	The students will be personally attended during the development of the master sessions as well as during the individual tutorials enabled for this purpose.
Laboratory practical	The students will be personally attended during the development of laboratory practices as well as during the individual tutorials enabled for this purpose.
Studies excursion	The students will be personally assisted during the development of field trips as well as during the individual tutorials enabled for this purpose.
Presentation	The students will be personally attended during the development of the presentations / exhibitions as well as during the individual tutorials enabled for that purpose.

Seminars The students will be personally attended during the development of the group tutorials as well as during the individual tutorials enabled for that purpose.

Assessment							
	Description	Qualification	Training and Learning Results				
Laboratory practical	Will be evaluated the attitude and the use of the activities realised in the laboratory and in the use of specific software.	20	A3	B1	C2	D2	B4
Studies excursion	Will be evaluated so much the quality of the report of campaign like the attitude during unroll it of the same.	40	A3	B1	C2	D2	A5 B4 C4 D4
Presentation	Will be evaluated the structure, content, clarity of the exhibition and organisation of the time during presentation.	40	A5	B4		D4	

Other comments on the Evaluation

The date, time and place of the evaluation tests will be published on the master's official website.

All tests can be evaluated on the second chance. Nonattendance to compulsory activities precludes the possibility to be evaluated in the second chance.

Students who study this subject are responsible and honest behavior. Any form of fraud (copying, or plagiarism) aimed at distorting the level of knowledge and skills reached in any type of test, report or work will be considered inadmissible. Fraudulent behaviors may involve suspending the subject during a full course. An internal record of these actions will be kept so that, in the case of recidivism, request the opening of a disciplinary file to the Rectorate.

Sources of information

Basic Bibliography

Emery, W.J, and Thomson, R.E., **Data analysis methods in physical oceanography**, Elsevier,

Complementary Bibliography

Varios, **Manuales de los diferentes equipos empleados**, varias,

Varios, **Methods in oceanography**, Elsevier,

Varios, **Informes de diferentes campañas oceanográficas**, Non publicados,

Recommendations
