SUBJECT TEACHING GUIDE

1190 - Research Methodology Applied to Marine Engineering

Master's Degree in Marine Engineering

Academic year 2026 - 2027

1. IDENTIFYING DATA					
Degree	Master's Degree in Marine Engineering			Type and Year	Compulsory. Year 1
Faculty	School of Maritime Engineering				
Discipline	Training in Research Research Methodology Applied to Marine Engineering				
Course unit title and code	1190 - Research Methodology Applied to Marine Engineering				
Number of ECTS credits allocated	6	Term		Semester based (1)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Combination of face-to-face and online training

Department	DPTO. CIENCIAS Y TECNICAS DE LA NAVEGACION Y DE LA CONSTRUCCION NAVAL
Name of lecturer	ALFREDO TRUEBA RUIZ
E-mail	alfredo.trueba@unican.es
Office	E.T.S. de Náutica. Planta: + 2. DESPACHO (223)
Other lecturers	ROBERTO MARTIN MELON

3.1 LEARNING OUTCOMES
Ability to initiate research activity.
Ability to apply the research methodology to marine engineering.
Ability for marine engineering projects and publish the results.
Use of leadership and management qualities.

4. OBJECTIVES
Provide students with the basic conditions for development the research activity (databases, ability to extract and synthesize information, preparation of scientific papers), by initiating the development of research projects and the development a doctoral thesis.

Train the trainee in the use of leadership and management qualities as set out in Table A-III/2 of the Seafarers' Training, Certification and Watchkeeping Code, as amended (STCW-78):
- Knowledge and ability to apply effective resource management: determination and leadership, including motivation.
- Knowledge and ability to apply decision-making techniques: assessing the effectiveness of results.
- Development, implementation and monitoring of standard operating procedures.

6. COURSE ORGANIZATION

CONTENTS	
1	1. Introduction to scientific research.
2	2. Scientific research methodology.
3	3. Access to information and documental resources.
4	4. The research project.
5	5. The doctoral thesis.
6	6. Publication of scientific work.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessment	%
Virtual classroom activities.	Activity evaluation with Virtual Media	Yes	Yes	25,00
Classroom activities.	Others	Yes	No	25,00
Theory test.	Written exam	Yes	Yes	50,00
TOTAL				100,00

Observations

EVALUATION METHODS:
1. (AAV) Evaluation of the evaluation activities carried out in the Virtual Classroom (25%):
Six evaluation tests proposed according to the calendar of activities and delivered through the Virtual Classroom during the non face-to-face period.
2. (AP) Evaluation of classroom activities (25%):
Activities to be carried out during the face-to-face period to be delivered through the Virtual Classroom as "Memory of face-to-face activities".
CONTINUOUS EVALUATION (50%) = AAV (25%) + AP (25%)
(TE) Theory exam (50%):
Option 1: Official exam of the ordinary call of January to be held according to the exam calendar of the Center.
Option 2: Official exam of the extraordinary call of February to be held according to the exam calendar of the Center.
In order to average with the continuous evaluation grade, it is required to obtain at least 40% of the grade corresponding to the theory exam.
I. WHO PASSES THE CONTINUOUS EVALUATION:
FINAL MARK = CONTINUOUS EVALUATION (50%) + TE (50%)
II. WHO DOES NOT PASS THE CONTINUOUS EVALUATION:
II.1. classroom activities (AP) passed, but Virtual Classroom activities (AAV) failed:
Must perform an "extraordinary evaluation activity" (AE) proposed by the professor of the subject to be delivered within the established period to recover the activities not performed in the Virtual Classroom.
To be eligible for this extraordinary recovery activity, it is required to obtain at least 40% of the grade corresponding to the theory exam.
CONTINUOUS EVALUATION (50%) = AE (25%) + AP (25%)
FINAL GRADE = CONTINUOUS EVALUATION (50%) + TE (50%)
II.2. Virtual Classroom Activities (VCA) passed, but face-to-face activities (PA) failed:
Face-to-face activities are not recoverable.
FINAL GRADE = AAV (25%) + TE (50%)
II.3. Virtual Classroom Activities (VCA) and failed face-to-face activities (PA):
Must perform an activity (A) proposed by the professor of the subject, present it (20 min) and defend it (10 min) to be delivered 48 h before the day of the act of presentation and defense set by the teacher.
To be eligible for this activity it is required to obtain at least 60% of the grade corresponding to the theory exam.

The face-to-face activities are not recoverable. FINAL GRADE = A (25%) + TE (50%)
Observations for part-time students
The same

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Bunge M. 2004. La investigación científica. 3ª ed. Siglo XXI editores.
Eyssautier De La Mora M. 2006. Metodología de la investigación: desarrollo de la inteligencia. 5ª ed. Thomson Editores.
Icart Isern MT, Pulpón Segura AM. 2012. Cómo elaborar y presentar un proyecto de investigación, una tesina y una tesis. Editorial Barcelona: Publicacions i Edicions de la Universitat de Barcelona.
Medawar PB. 2011. Título: Consejos a un joven científico. Editorial Barcelona: Publicacions i Edicions de la Universitat de Barcelona.
Münch L, Ángeles E. 2011. Métodos y técnicas de investigación. 4ª ed. Trillas editores.
Namakforoosh MN. 2005. Metodología de la investigación. 2ª ed. Limusa editores.
Tamayo M. 2004. El proceso de la investigación científica: incluye evaluación y administración de proyectos de investigación. 4ª ed. Limusa editores.