

## SUBJECT TEACHING GUIDE

1188 - Maintenance I

Master's Degree in Marine Engineering

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Master's Degree in Marine Engineering			Type and Year	Compulsory. Year 1
Faculty	School of Maritime Engineering				
Discipline	Maintenance				
Course unit title and code	1188 - Maintenance I				
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	MANUEL A. GIRON PORTILLA
E-mail	manuel.giron@unican.es
Office	E.T.S. de Náutica. Planta: + 2. DESPACHO (222)
Other lecturers	

### 3.1 LEARNING OUTCOMES

- Operation, monitoring, performance evaluation and maintenance of the safety of the Propulsion installation and auxiliary machinery, in accordance with regulation III / 2 of the STCW Convention, as amended.
- Manage fuel, lubrication and ballast operations, in accordance with regulation III / 2 of the STCW Convention as amended.
- Manage safe maintenance and repair procedures, in accordance with regulation III / 2 of the STCW Convention, as amended.
- Detect and define the cause of the malfunctions of the machines and repair them, in accordance with regulation III / 2 of the STCW Convention, as amended.
- Prepare emergency and breakdown control plans, and act effectively in such situations, in accordance with regulation III / 2 of the STCW Convention as amended.
- 388/5000  
Project maintenance operations of marine cogeneration systems as well as their electrical energy generation, transport and distribution systems.
  - Project maintenance operations for both marine and industrial heat and cold systems.
  - Project maintenance operations of systems of machines and thermal motors and hydraulic and electrical marine machines.

### 4. OBJECTIVES

- Practical knowledge: Effective operation, monitoring, performance evaluation and maintenance of the safety of the Propulsion installation and auxiliary machinery.
- Machinery operation and maintenance, including pumping systems and pipelines.
- Practical knowledge: Organization of safe maintenance and repair procedures.
- Skills: Plan maintenance, including class and mandatory checks.
- Objectives Practical knowledge: Plan repairs.
- Practical knowledge: Detection of machine malfunctions, troubleshooting and measures to prevent breakdowns.
- Practical knowledge: Inspection and adjustment of the equipment.
- Ship construction and breakdown control.

### 6. SUBJECT PROGRAM

#### CONTENTS

1	Design and management of maintenance operations marine cogeneration systems. Part I.
2	Project and management of systems maintenance generation, transport and distribution of electrical energy. Part I.
3	Management and management of systems maintenance hot and cold. Part I.
4	Maintenance of machines and thermal engines and marine hydraulic and electric machines. Part I.
5	Maintenance of pumping equipment.

**7. ASSESSMENT METHODS AND CRITERIA**

Description	Type	Final Eval.	Reassessn	%
Exam	Oral Exam	Yes	Yes	50,00
In-person activities	Others	Yes	No	30,00
Activities in the virtual platform	Activity evaluation with Virtual Media	Yes	Yes	20,00
<b>TOTAL</b>				<b>100,00</b>

**Observations**

Continuous evaluation = Activities in the virtual platform (20%) + In-person activities (30%)  
 Final score = Continuous evaluation (50%) + Exam (50%)

**Observations for part-time students**

Students enrolled in this subject part-time will not be subject to any condition on attending theory classes and classroom practices.  
 The rest of observations will be the same as for the rest of the students. Being able to participate in the same evaluation activities and with the same evaluation criteria.

**8. BIBLIOGRAPHY AND TEACHING MATERIALS**

**BASIC**

Machinery component maintenance and repair / Heinz P. Bloch and Fred K. Geitner. Gulf Publishing Company.  
 Machinery failure analysis and troubleshooting / Heinz P. Bloch, Fred K. Geitner. Gulf Publishing Company.  
 Manual de mantenimiento industrial / Robert C. Rosaler, James O. Rice. McGraw-Hill.