ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

83000004 - Integrated Logistics Support

DEGREE PROGRAMME

08IN - Master Universitario En Ingenieria Naval Y Oceanica

ACADEMIC YEAR & SEMESTER

2024/25 - Semester 1

Index

Learning guide

1. Description

1.1. Subject details

Name of the subject	83000004 - Integrated Logistics Support
No of credits	3 ECTS
Type	Compulsory
Academic year ot the programme	First year
Semester of tuition	Semester 1
Tuition period	September-January
Tuition languages	English
Degree programme	08IN - Master Universitario en Ingenieria Naval y Oceanica
Centre	08 - Escuela Tecnica Superior De Ingenieros Navales
Academic year	2024-25

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Antonio Crucelaegui Corvinos (Subject coordinator)	Dtor's Office	antonio.crucelaegui@upm.es	Th - 12:00 - 15:30

* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

3. Skills and learning outcomes *

3.1. Skills to be learned

CE06 - Capacidad para desarrollar y gestionar la ingeniería de apoyo logístico, mantenimiento y reparación de buques y artefactos.

CTUPM02 - (S3) Organización y planificación. Los estudiantes fijan objetivos, con la planificación y programación de actividades (tiempo y fases) y con la organización y gestión de los recursos necesarios para alcanzarlos.

CTUPM04 - (S5) Uso de la lengua inglesa. Los estudiantes establecen conversaciones con nativos sin tener problemas de comunicación adicionales tanto de forma oral como escrita.

CTUPM06 - (S7) Comunicación oral y escrita. Los estudiantes transmiten conocimientos y expresan ideas y argumentos de manera clara, rigurosa y convincente, tanto de forma oral como escrita, utilizando los recursos gráficos y los medios necesarios adecuadamente y adaptándose a las características de la situación y de la audiencia.

3.2. Learning outcomes

RA28 - C: Capacidad para la definición e implantación de planes de mantenimiento.Aplicación a casos de estudio de la Ingeniería Naval Militar.

* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

4. Brief description of the subject and syllabus

4.1. Brief description of the subject

STUDY OF THE INTEGRAL ELEMENTS OF INTEGRATED LOGISTICS SUPPORT IN ORGANIZATIONS AND COMPANIES, OF THE INTERRELATIONSHIP BETWEEN THE ASPECTS OF DESIGN, PRODUCTION, OPERATION AND MAINTENANCE THROUGHOUT THE LIFE CYCLE OF THE PRODUCTS AND OF THE MOST SIGNIFICANT CHARACTERISTICS OF THE MAINTENANCE PLANS OF THE FACILITIES.

RELEVANT ASPECTS IN THE COMPUTERISED MANAGEMENT OF MAINTENANCE PLANS FOR COMPANIES AND LARGE FACILITIES AND LOGISTICS SUPPORT SERVICES

RELEVANT ELEMENTS IN THE NAVY'S LOGISTICS SUPPORT STRATEGY

4.2. Syllabus

1. Elements of Integrated Logistics Support
   - 1.1. Evolution of Logistics towards Integrated Logistics Support
   - 1.2. Controlling the configuration of the elements of a system
   - 1.3. Reliability. Maintainability
   - 1.4. Support teams. Facilities. Spare parts management. Packaging and transport
2. The Maintenance Plan
   - 2.1. Efectividad y disponibilidad operativa
   - 2.2. El Plan de Mantenimiento preventivo. Tipos de planes
   - 2.3. Tareas de Mantenimiento en las varadas. Tratamiento de módulos
   - 2.4. Perfil económico del Ciclo de Vida
3. The maintenance management and control needs of global or complex companies
   - 3.1. Management needs. Characteristics and problems of maintenance management systems
   - 3.2. Functionalities for equipment and systems. Preventive Maintenance Treatment
   - 3.3. Operational functionalities of the company and the fleet. Procurement, staffing, documentation

3.4. Case Study: Calvo, a Global Product Extraction and Processing Company: Implementing a Fleet Management System

4. The Analysis of Logistic Support

4.1. Regulations. The U.S. Navy MIL-STD 1388 standard

4.2. Analysis of failure modes and criticality

4.3. Reliability-focused maintenance

4.4. CCase study: Spanish Navy: ISEMER

5. Schedule

5.1. Subject schedule*

Week	Type 1 activities	Type 2 activities	Distant / On-line	Assessment activities
1	**Lesson 1.1, 1.2** Duration: 02:00			
2	**Lesson 1.3, 1.4** Duration: 02:00			
3	**Lesson 2.1** Duration: 02:00			
4	**Lesson 2.2:** Duration: 02:00			
5	**Lesson 2.3** Duration: 02:00			
6	**Lesson 2.4** Duration: 02:00			
7	**Lesson 3.1** Duration: 02:00			
8	**Lesson 3.2** Duration: 02:00			
9	**Lesson 3.3** Duration: 02:00			
10	**Lesson 3.4** Duration: 02:00			
11	**Lesson 4.1** Duration: 02:00			
12	**Lesson 4.2** Duration: 02:00			
13	**Lesson 4.3** Duration: 02:00			
14	**Writen exam** Duration: 02:00			**Control** Progressive assessment Presential Duration: 02:00

15	**Lesson 4.4** Duration: 02:00			
16				**Final Work on a Maintenance Plan** Progressive assessment Presential Duration: 02:00
17				**Final exam** Global examination Presential Duration: 03:00

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

6. Activities and assessment criteria

6.1. Assessment activities

6.1.1. Assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
14	Control		Face-to-face	02:00	20%	3 / 10	CE06 CTUPM06 CTUPM04 CTUPM02
16	Final Work on a Maintenance Plan		Face-to-face	02:00	80%	5 / 10	CE06 CTUPM06 CTUPM02

6.1.2. Global examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
17	Final exam		Face-to-face	03:00	100%	5 / 10	CTUPM04 CTUPM02 CE06 CTUPM06

6.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Extraordinary Final Exam		Face-to-face	02:00	100%	5 / 10	CE06 CTUPM06 CTUPM04 CTUPM02

6.2. Assessment criteria

Progressive evaluation:

It consists of 2 tests, a face-to-face control of approximately one hour, with multiple-choice questions and development questions, and an individual work consisting of the preparation in Excel sheets of a complete Maintenance Plan for an offshore wind farm or facility of similar complexity, to be carried out over a period of approximately one month from the delivery of the statement.

The minimum mark in the control to pass the subject per year will be 4/10.

The control will weight the final grade 1/4 with the individual work, which will be weighted in the grade 3/4.

Overall assessment:

The ordinary call will consist of a global face-to-face exam of the entire subject, lasting about two hours, which may include theoretical questions and practical exercises. To pass the subject, you will have to obtain a grade of at least 5.0. By means of the evaluation by final exam, parts may not be released separately for the extraordinary call. The extraordinary call will have the same format (type, duration, minimum grade and competencies evaluated as the evaluation only by final test)

7. Teaching resources

7.1. Teaching resources for the subject

Name	Type	Notes
Integrated Logistics Support Handbook. James Jones 2006. Mac Graw Hill	Bibliography	
CALS (Adquisición y apoyo continuado durante el ciclo de vida). Rowland Freeman, Isdefe, 1995	Bibliography	

Ingeniería de Sistemas, Benjamín Blanchard, Isdefe 1995	Bibliography	
Ingeniería Logística, Benjamín Blanchard, Isdefe 1995	Bibliography	
Integrated logistics support: the design engineering link. Walter Finkelstein 1988	Bibliography	
Maintainability: A Key to Effective Serviceability and Maintenance Management. Benjamin S. Blanchard	Bibliography	
Introduction to Logistics Engineering. Editado por G. Don Taylor CRC PRESS 2008	Bibliography	
Reliability, Maintenance and Logistic Support: - A Life Cycle Approach. U Dinesh Kumar, John Crocker, J. Knezevic. Sprin-ger US 2012	Bibliography	
Fiabilidad, Mantenibilidad, Efectividad: un enfoque sistémico. Alberto Sols. Univ. Pontificia de Comillas. 2000	Bibliography	
Logística integral: la gestión operativa de la empresa. Julio Juan Anaya. ESIC Editorial. 2011	Bibliography	
Armada española ? servicios ? logística http://armada.mde.es	Web resource	
Subject website http://moodle.upm.es	Web resource	
Centro de Cálculo	Equipment	

8. Other information

8.1. Other information about the subject

Whenever possible due to the availability of the Navy, one of the lessons will be taught by Navy professionals. It will deal with the Maintenance plans and in particular the Maintenance of the S80 submarine class.