

Liverpool John Moores University

Title: Marine Maintenance and Asset Management
Status: Definitive
Code: **7001MTS** (126854)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: Engineering

Team	Leader
Sean Loughney	Y
Eddie Blanco Davis	

Academic Level: FHEQ7 **Credit Value:** 20 **Total Delivered Hours:** 36
Total Learning Hours: 200 **Private Study:** 164

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	24
Tutorial	12

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	AS1	Vessel Lifecycle and Maintenance Requirements	50	
Report	AS2	Planning and execution of maintenance or repairs	50	

Aims

The aim of this module is to provide knowledge about how the maintenance and repair of an offshore installation, vessel or a fleet of vessels is managed. In particular, it is intended to consider the lifecycle of a vessel and how maintenance is planned, scheduled and executed.

Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate a deep understanding of the lifecycle of a vessel and offshore structure from construction to scrappage.
- 2 Evaluate and prioritise requirements for planned and unplanned maintenance and repair scenarios.
- 3 Show a critical awareness of the records, certificates and stakeholder interactions, which are required to manage marine assets in compliance with local and international regulations.
- 4 Create systematic maintenance plans for various vessel types and scenarios, including offshore installations.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Lifecycle and Maintenance	1	2
Planning and Execution	3	4

Outline Syllabus

Classes of engineering materials used in the construction/fabrication of marine and offshore structures and the role of materials engineering in this stage, including the analysis of material properties and how these properties impact on the life cycle of the asset.

Knowledge of the basics of electro-chemical corrosion of metals and fracture mechanics approaches to defect assessment, and non-destructive testing.

Condition monitoring and the inclusion of the fundamentals of failure-based or default maintenance, design-out maintenance, and preventive maintenance.

Basics of Life Cycle Assessment (LCA) and the analysis of the assets' lifecycle (construction, operation, maintenance, and scrapping).

Fundamentals of circular economy, Design for Remanufacturing (DfRem) and value-added End of Life (EoL).

Learning Activities

Lectures, Tutorials

Notes

This module contributes to the development of specialist management skills required to operate in a management role such as that of a Marine Technical Superintendent.