

Liverpool John Moores University

Title: Marine Engineering Knowledge Motor
Status: Definitive
Code: **5523ALAM** (123818)
Version Start Date: 01-08-2019

Owning School/Faculty: Engineering
Teaching School/Faculty: Malaysian Maritime Academy

Team	Leader
Geraint Phylip-Jones	Y

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 128
Total Learning Hours: 200 **Private Study:** 72

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	121
Tutorial	4

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	50	3
Portfolio	AS2	A portfolio of formative and summative assessment.	50	

Aims

To provide students with the understanding of safe working principles of marine diesel engines, steam turbines, boilers and associated equipment to plan, manage, and operate the main propulsion and auxiliary machinery on-board merchant ships. Also provide students with an understanding of performance monitoring, fault diagnosing and reliability based maintenance.

Learning Outcomes

After completing the module the student should be able to:

- 1 Recount and discuss design, construction, operation, maintenance and performance of main and auxiliary diesel engines.
- 2 Discuss the design, operation and maintenance of main and auxiliary diesel engine ancillary systems.
- 3 Discuss auxiliary steam plant design construction, operation and maintenance.

Learning Outcomes of Assessments

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

Examination	1	2	3
Portfolio	1	2	3

Outline Syllabus

- 1 *Design, construction, operation and maintenance of main and auxiliary diesel engines and associated systems.*
- 2 *Start-up, operation and shut-down procedures of main and auxiliary diesel engines and auxiliary systems.*
- 3 *Monitoring and performance assessment of diesel propulsion plant and auxiliary systems.*
- 4 *Propulsive characteristics of diesel engines including speed, power and fuel consumption.*
- 5 *Analyzing, testing and maintain of main and auxiliary engine speed and power controls systems.*
- 6 *Maintenance regimes for safe and fuel efficient operation.*
- 7 *Fuel/lubricating oil properties and treatments.*
- 8 *Fuel pumps and injectors.*
- 9 *Functions and mechanism of control systems for main and auxiliary diesel engines.*
- 10 *Marine auxiliary boilers and auxiliaries*
- 11 *Boiler Operation, controls and maintenance for safe and efficient performance.*

Learning Activities

A combination of lectures and tutorial sessions.

Notes

This module will provide a good grounding for those students wishing to pursue a career in the following marine related disciplines or industries: Marine Engineering Operations, Marine Engineering Design, Marine Superintendent, Surveying and

Shipbuilding.