

Liverpool John Moores University

Title: MARINE DESIGN ENGINEERING
Status: Definitive
Code: **7036ENG** (106102)
Version Start Date: 01-08-2018

Owning School/Faculty: Maritime and Mechanical Engineering
Teaching School/Faculty: Maritime and Mechanical Engineering

Team	Leader
Geraint Phylip-Jones	Y

Academic Level: FHEQ7 **Credit Value:** 20 **Total Delivered Hours:** 51
Total Learning Hours: 200 **Private Study:** 149

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	36
Tutorial	12

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	70	3
Report	AS2	Group Design Presentation	30	

Aims

The aim the module is to provide students with the appropriate level of marine engineering knowledge and expertise required of an effective member of a marine engineering design team.

Learning Outcomes

After completing the module the student should be able to:

- 1 Develop Process & Instrumentation Diagrams
- 2 Critically analyse sound pressure levels in an enclosed space
- 3 Apply HAZOP to a complex scenario
- 4 Discuss the concept of condition monitoring and associated techniques
- 5 Examine marine propulsion engine characteristics and identify propeller requirements

Learning Outcomes of Assessments

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

Examination	1	2	3	4	5
Report	1				

Outline Syllabus

Space engineering - to become aware of issues surrounding the layout of a machinery space taking account of items such as pipe routes, tankage, proximity to associated plant, maintenance space, access and safety etc.

Prime mover performance - become aware of all factors that influence performance and output of prime movers, e.g. altitude, ambient conditions, back pressures (exhaust), noise suppression, emissions control etc.

Detailed development of P & ID's.

NTU method for evaluation of heat exchanger performance.

Condition monitoring techniques including vibration analyses.

HAZOP studies.

Learning Activities

Formal lectures, tutorials, video tapes, simulation of design problems.

Notes

The module is designed to provide the student with an in-depth grounding of the typical practices and procedures that they will encounter should they pursue a career in the Marine Engineering Design environment. The module will also provide a good grounding for those students pursuing careers in other industries such as power generation and process engineering.