

Liverpool John Moores University

Title: Marine Design Engineering
Status: Definitive
Code: **7007MSC** (121676)
Version Start Date: 01-08-2021

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

Team	Leader
Eddie Blanco Davis	Y

Academic Level: FHEQ7 **Credit Value:** 20 **Total Delivered Hours:** 35

Total Learning Hours: 200 **Private Study:** 165

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Tutorial	11

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS2	Examination	70	2
Portfolio	AS1	Portfolio	30	

Aims

The aim of 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 Evaluate the heat exchanger performance by NTU method
- 6 Critically evaluate and hence demonstrate an understanding of the importance of shafting alignment by taking into the account variation in bearing offset while in service

Learning Outcomes of Assessments

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

Examination	1	2	3	4	5	6
Portfolio	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.

Shafting Alignment.

Learning Activities

Formal lectures, Tutorials, Videos.

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.