

## Liverpool John Moores University

Title: Marine Design Engineering  
Status: Definitive  
Code: **7120ENG** (120103)  
Version Start Date: 01-08-2018

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

Team	Leader
Eddie Blanco Davis	Y

**Academic Level:** FHEQ7  
**Credit Value:** 20  
**Total Delivered Hours:** 38  
**Total Learning Hours:** 200  
**Private Study:** 162

### Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	24
Tutorial	12

**Grading Basis:** 50 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS2	Examination	70	2
Portfolio	AS1	Portfolio	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 Evaluate the heat exchanger performance by NTU method
- 6 Understand the 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, Videotapes.

### **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.