

## Liverpool John Moores University

Title: ENGINEERING AND NAVAL ARCHITECTURE  
Status: Definitive  
Code: **5205NAU** (121941)  
Version Start Date: 01-08-2019

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

Team	Leader
Milad Armin	Y
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**Academic Level:** FHEQ5      **Credit Value:** 20      **Total Delivered Hours:** 103  
**Total Learning Hours:** 200      **Private Study:** 97

### Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	88
Tutorial	12

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Construction Coursework - 1500 words	30	
Exam	AS3	Examination - Marine Engineering	40	1.5
Exam	AS2	Examination - Survey and Maintenance	30	1.5

### Aims

*To develop a sound knowledge of the structural requirements of vessels with respect to the handling and carriage of cargo, damage limitation, maintenance and preparations for surveys. An advanced understanding of powerplant and auxilliary*

*machinery used on ships.*

## **Learning Outcomes**

After completing the module the student should be able to:

- 1 Demonstrate an understanding of structural requirements and features.
- 2 Explain maintenance methods and procedures.
- 3 Explain preparation for survey of vessel and its equipment.
- 4 Explain the design and operation of marine power plant.

## **Learning Outcomes of Assessments**

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

Construction Coursework	1	
Exam - Marine Engineering	4	
Exam - Survey and Maintenance	2	3

## **Outline Syllabus**

*Loadline: Condition of assignment, summer freeboard, timber freeboard, all seasons loadline.*

*International codes for the construction of ships.*

*Damage limitation features: Watertight bulkheads, fire division, bilge and fire fighting systems.*

*Strengthening for ice.*

*Materials: Steel, non-ferrous alloys.*

*Processes: Annealing, normalizing, welding, galvanizing and bonding.*

*Material failure.*

*Corrosion prevention and planned maintenance.*

*Preparation for survey and drydocking.*

*Marine power plants: Diesel, steam turbine and gas turbine.*

*Auxilliary machinery systems.*

*Steering systems: Ram and rotary.*

*Factors affecting fuel consumption: Fuel consumption calculation, conservation of fuel, propeller behaviour analysis (pitch and slip), ship hull form and conditions.*

## **Learning Activities**

Lectures and tutorials.

## **Notes**

This module provides an overview of the construction and maintenance of ships and

of marine engineering systems.