

## Liverpool John Moores University

Title: Engineering Knowledge and Naval Architecture  
Status: Definitive  
Code: **4555SAM** (122674)  
Version Start Date: 01-08-2020

Owning School/Faculty: Engineering  
Teaching School/Faculty: Springdale Academy Of Maritime Education (SAMET)

Team	Leader
Geraint Phylip-Jones	Y

**Academic Level:** FHEQ4      **Credit Value:** 20      **Total Delivered Hours:** 68

**Total Learning Hours:** 200      **Private Study:** 132

### Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	44
Tutorial	22

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS2	Examination	60	2
Report	AS1	Written report 1500 words max.	40	

### Aims

*To provide a comprehensive introduction to Marine Engineering, Naval Architecture and Ship Construction, the module will concentrate on main and auxiliary propulsion systems, ship stability and construction features.*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Discuss the design and operation of marine auxiliary machinery and systems.
- 2 Debate the application of different types of ship propulsion plant and identify the advantages and disadvantages of alternative propulsion systems.
- 3 Predict ship heel, list, trim and powering resistance.
- 4 Discuss and illustrate significant features of ship construction

### **Learning Outcomes of Assessments**

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

Examination	1	2	3	4
Report	1	3	4	

### **Outline Syllabus**

*Marine Engineering Knowledge;*

*Types of main propulsion machinery and their application to different types of vessels.*

*Auxiliary machinery including boilers, steering gear, refrigeration, emissions control, sewerage treatment.*

*Auxiliary systems including sea water/freshwater cooling, fuel oil, lubricating oil, fire extinguishing and detection.*

*Ship stability and Naval Architecture;*

*Ship stability - heel, list and trim*

*Ship resistance and powering*

*Ship Construction;*

*Discuss and identify different ship types and identify significant features.*

*Water and weather tightness.*

*Structural terminology for different framing systems, bulkheads and Hatches.*

*The function and structure of tanks; double bottoms, sides, wings and peaks.*

### **Learning Activities**

A combination of lectures and tutorials supported by a ship visit.

### **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.