

## Liverpool John Moores University

Title: Electrical, Electronic and Control Engineering

Status: Definitive

Code: **5554SAM** (125426)

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

<b>Academic Level:</b>	FHEQ5	<b>Credit Value:</b>	10	<b>Total Delivered Hours:</b>	35
<b>Total Learning Hours:</b>	100	<b>Private Study:</b>	65		

### Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	22
Tutorial	11

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	100	2

### Aims

*To provide students with the knowledge and skill to operate and maintain shipboard electrical machinery and systems with high levels of safety and efficiency.*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Recount the design features and operating mechanism of high voltage marine propulsion system.
- 2 Discuss various types of control systems, their application and performance.
- 3 Discuss LV and HV safety systems and survey requirements.

### **Learning Outcomes of Assessments**

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

Exam	1	2	3
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### **Outline Syllabus**

*Electrical, Electronic and Control Engineering:*

- 1 *Electrical propulsion systems.*
- 2 *HV Power distribution system.*
- 3 *Electrical safety in tankers.*
- 4 *UMS, bridge control and alarm indication system.*
- 5 *Electromagnetic Interference.*
- 6 *Fundamentals of Instrumentation, automation and control Systems theory, types of control systems P, P+I, P+I+D controls, pneumatic/hydraulic/electrical-electronic controls and controller tuning.*
- 7 *Electrical safety, test equipment, function test, calibration of sensors and transducers, circuit symbols, wiring and schematic diagram, troubleshooting, fault finding procedure, programmable logic controller and microcontrollers*

### **Learning Activities**

A combination of lectures and tutorials

### **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.