

Liverpool John Moores University

Title: Testing Product Performance
Status: Definitive
Code: **5512ENGRIV** (117219)
Version Start Date: 01-08-2016

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

Team	Leader
Russell English	Y

Academic Level: FHEQ5 **Credit Value:** 10 **Total Delivered Hours:** 32
Total Learning Hours: 100 **Private Study:** 68

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	10
Practical	20

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		60	2
Essay	Essay		40	

Aims

To introduce students to product testing and how it may be used to enhance product development, design and performance.

Learning Outcomes

After completing the module the student should be able to:

- 1 Use standards to enhance product design and performance
- 2 Undertake a range of static, dynamic and durability tests useful in optimising product design and performance
- 3 Explain why the tests are undertaken and the products they are used with
- 4 Analyse and utilise test data with respect to enhancing product design and verifying its performance

Learning Outcomes of Assessments

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

Exam	1	3	
Essay	2	3	4

Outline Syllabus

Reliability – how it is measured and why it is important.

Standards - what types of standard are available and what areas they cover; why standards are used with respect to product testing and performance.

Mechanical testing – static, dynamic and durability testing; why the tests are employed and typical applications.

Environmental testing – temperature, humidity, rain/water, dust etc.

Electrical testing – power surges, static.

Flow testing – aerodynamics, hydrodynamics, burst & proof pressure, hydraulic & pneumatic flow.

Equipment used in product testing – test frames, wind tunnels, microscopes, etc.

Learning Activities

The module will consist of practical individual and group exercises supplemented with a series of lectures and case studies.

Notes

The coursework is a group exercise that will involve the design and testing of an energy absorbing impact zone