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Title: Testing Product Performance  
Status: Definitive  
Code: **5012ENGFRI** (117042)  
Version Start Date: 01-08-2018

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	exam	60	2
Essay	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	2	3	4
Essay	1	3	

### **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