Liverpool John Moores University

Title:	Testing Product Performance
Status:	Definitive
Code:	**5507ENGICA** (119158)
Version Start Date:	01-08-2018
Owning School/Faculty:	Engineering
Teaching School/Faculty:	HICOM University College Sdn,Bhd

Team	Leader
Russell English	

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
Essay	AS1	Design and Performance of an Energy Absorbing Impact Zone	40	
Exam	Exam		60	2

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:

Des & Perf of an EAIZ	2	3	4
Examination	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.
Key Skills:
Presentation skills,
Technical report writing,
Data analysis.
Group/team working,
Problem solving.

Learning Activities

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

Course Material	British Standards
Author	
Publishing Year	
Title	Various British, European, US and International standards.
Subtitle	
Edition	
Publisher	

ISBN	

Course Material	Book
Author	Pecht, M
Publishing Year	2009
Title	Product Reliability, Maintainability, and Supportability Handbook
Subtitle	
Edition	2nd
Publisher	CRC Press
ISBN	978-0-8493-9879-7

Course Material	Book
Author	Gilmore, HL, Schwartz, HC
Publishing Year	1986
Title	Integrated Product Testing and Evaluation: A Systems Approach to Improve Reliability and Quality
Subtitle	
Edition	2nd
Publisher	CRC Press
ISBN	0824774707

Notes

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