

Liverpool John Moores University

Title: Engineering and Technology Practice
Status: Definitive
Code: **3001FND** (120961)
Version Start Date: 01-08-2016

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: Electronics and Electrical Engineering

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Academic Level: FHEQ3 **Credit Value:** 20 **Total Delivered Hours:** 102
Total Learning Hours: 200 **Private Study:** 98

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	6
Practical	72
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	AS1	Experimental Design & Practice	50	
Practice	AS3	Problem Solving	30	
Report	AS2	Research	20	

Aims

This module aims to develop the practical skills of students by applying what they learn in their mathematics and physics modules. It will provide an experience of experimental planning, execution and report writing, as well as activities aimed at developing problem solving skills. It also embeds the study skills which are required for students to become effective and independent learners.

Learning Outcomes

After completing the module the student should be able to:

- 1 Design an experiment, following the scientific method, in order to systematically explore a physical phenomenon in an engineering science context.
- 2 Write a report on a laboratory exercise which they have planned and executed, including a systematic analysis of the results and any sources of experimental error.
- 3 Research a topic in engineering or technology, and write a properly referenced report on their findings.
- 4 Apply principles of mathematics and science to solve a problem in an engineering and technology context
- 5 Demonstrate that they have the study skills required to be an effective and independent learner in a higher education environment.

Learning Outcomes of Assessments

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

Experimental Des & Practice	1	2	5
Problem Solving	3	5	
Research	4	5	

Outline Syllabus

The list below provides an indicative list of topics which may be covered in this module:

Study Skills

- *Read effectively and identify appropriate resources to study topical engineering problems*
- *Identify their study needs and plan their study effectively*
- *Work effectively in a group*
- *Present information in an appropriate style*

Experimental Measurement

- *Random and systematic errors in measurements*
- *Precision, repeatability, resolution and accuracy of measurements*
- *Uncertainty in measurement*
- *Representing uncertainty*

Experimental Methods

- *Report writing*
- *Handling experimental data*
- *Graphical representation*
- *Errors*
- *Analysis of results, and the formulation of conclusions*

Experimental Practice

- *Complete a series of experiments, keeping a logbook to record notes, measurements and observations.*

Learning Activities

Laboratory experiments, tutorials, online tests

Notes

Not applicable