

Liverpool John Moores University

Title: Engineering and Technology Practice
Status: Definitive
Code: **3101FNDMEC** (127116)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: Engineering

Team	Leader
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Academic Level: FHEQ3 **Credit Value:** 20 **Total Delivered Hours:** 60

Total Learning Hours: 200 **Private Study:** 140

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	11
Practical	38
Tutorial	11

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	AS1	Academic skills	40	
Report	AS2	Experimental Methods and Practice	60	

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 academic and 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 Demonstrate the academic skills required to be an effective and independent learner in a higher education environment.
- 2 Apply principles of mathematics and science to solve problems in an engineering and technology context.
- 3 Perform a series of engineering experiments, process the data collected, and produce a formal technical report.

Learning Outcomes of Assessments

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

Academic Skills	1	2
Experimental Practice	2	3

Outline Syllabus

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

Study Skills:

- *Skills@LJMU: Academic Study Skills, Maths and Statistics, IT Skills, Library Skills*
- *Read effectively and identify appropriate resources to study topical engineering problems*
- *Identify study needs and plan study effectively*
- *Work effectively in a group*
- *Present information in an appropriate style*
- *Introduction to research skills*

Experimental Measurement:

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

Experimental Methods and Practice:

- *Performing experiments, keeping a logbook to record notes, measurements and observations.*
- *Handling and processing experimental data*
- *Graphical and tabular representation of data*
- *Errors, uncertainty, accuracy and precision*
- *Analysis of results and the formulation of conclusions*
- *Technical report writing*

Learning Activities

Laboratory experiments, lectures and tutorials.

Notes

This year long module supports students in developing the academic and experimental skills needed to become effective and independent learners. It includes regular contact with personal tutors, encouraging a smooth transition into Higher Education.