

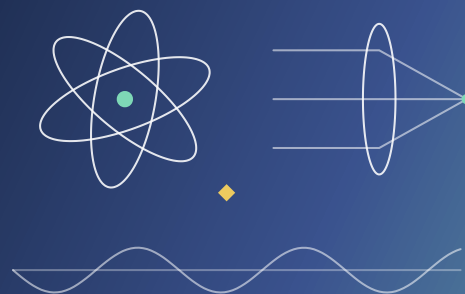
Module code

SPP-1201

Type of module

Undergraduate: Applied Physics – Major Core

Experiments in Physics 1



Modular credits

4

Total student
engagement

56 hours

Prerequisite

None

Anti-requisite

None

Aims

To provide students with basic laboratory skills and methods of data analysis in physics.

Module learning outcomes (MLO)

On successful completion of this module, a student will be expected to be able to:

MLO 1

Integrate theoretical knowledge and practical skills in electronics, measurement techniques, and instrumentation to design and conduct basic physics experiments.

MLO 2

Critically evaluate the performance and limitations of laboratory tools, electronic components, and measurement instruments, including analysis of uncertainties.

MLO 3

Apply data processing tools and data analysis methods to process experimental results, create graphs, and interpret findings effectively.

MLO 4

Synthesise experimental data from electrical and measurement-based experiments to draw evidence-based conclusions and propose improvements.

MLO 5

Analyse experimental tasks collaboratively and independently in laboratory projects, demonstrating problem-solving, accuracy, and effective use of experimental tools and techniques.

Module contents

Basic electronics, identification of electronic components and use of digital multimeters

Connection of basic electrical components

Soldering and familiarisation with common tools

Principles of vernier callipers and micrometer screw gauges

Use of computers for graph-plotting and data treatment

Analysis of uncertainties in measurements

Use of traditional cathode-ray tubes and modern computer oscilloscopes

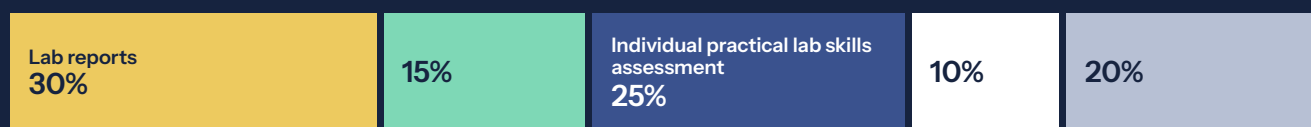
Assessment

0%

Examination

100%

Coursework



■ Lab reports — 30%

■ Lab book assessment — 15%

■ Individual practical lab skills assessment — 25%

■ Assignment — 10%

■ Class test — 20%

Formative assessment

Weekly discussion
and feedback

Summative assessment

COMPONENT	WEIGHTING
Examination	0%
Coursework	100%
Individual	100%
Lab reports	30%
Lab book assessment	15%
Individual practical lab skills assessment	25%
Assignment	10%
Class test	20%

Graduate attributes and skills

Programme learning objectives (PLO) addressed

1

PLO 1 (Core Disciplinary Knowledge)

2

PLO 2 (Critical Thinking and Comparative Analysis)

3

PLO 3 (Experimental and Instrumentation Skills)

4

PLO 4 (Numerical and Analytical Competence)

6

PLO 6 (Communication and Professionalism)

Sustainability concept addressed

8

SDG 8 Decent Work and Economic Growth

9

SDG 9 Industry, Innovation and Infrastructure

Digital skills/software used (not limited to)

Word processing software (e.g. Microsoft Word)

Data processing software (e.g. Microsoft Excel)

Application and driver software (e.g. TiePie)

Web browsers (e.g. Internet Explorer, Google Chrome)

Learning Management Systems (e.g. Canvas)

Communication Software (e.g. Microsoft Teams, Zoom)

Micro-credentialling option

No

Stackable towards GenBESTARI Undergraduate Degree Programme or other relevant Lifelong Learning Programmes

No

Document details

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