

Module code

SPB-1203

Type of module

Undergraduate: Biological Sciences – Major Core

Skills in Biological Sciences



Modular credits

4

Total student
engagement

56 hours

Prerequisite

None

Anti-requisite

None

Aims

To provide students with hands-on experience in practical biology skills, improve their ability to write technical papers and make oral presentations in a professional scientific format, and introduce them to biostatistical analyses.

Module learning outcomes (MLO)

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

MLO 1

Analyse basic tools used in biological inquiry emphasising organisational skills, critical thinking, laboratory skills, methods of science, hypothesis testing and presentation skills and biostatistical analyses.

MLO 2

Analyse and understand how to effectively interpret and communicate results, experiments and published literature in a variety of formats.

MLO 3

Connect the concepts and approaches to facilitate hypothesis testing and experimentation, leading to novel interpretations and discoveries.

MLO 4

Apply essential laboratory techniques and follow standard safety procedures to conduct biological experiments with accuracy and precision.

MLO 5

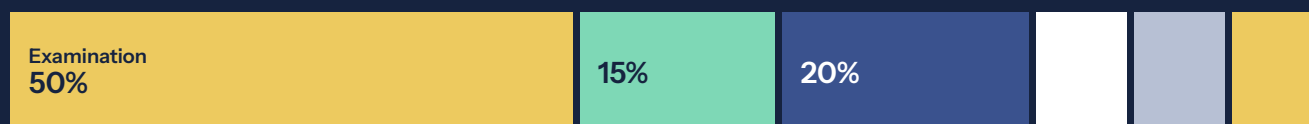
Collaborate productively in group-based activities by demonstrating communication and problem-solving skills.

Module contents

Overview of basic biology skills	Organisational skills	Basic laboratory and reasoning skills
Methods of science and hypothesis testing	Experimental Design	Presentation skills and critical thinking
Scientific reading and writing	Effective interpretation of results and experiments	Effective communication of results and published literature
Descriptive statistics	Data presentation and graphics	Inferential statistics
Simple linear regression and correlation	Data transformations	Non-parametric tests

Assessment

50% **50%**
Examination Coursework



■ Examination — 50% ■ Written assignments — 15% ■ Written practical reports — 20% ■ Oral presentation — 5%
■ Written assignment — 5% ■ Scientific poster development — 5%

Formative assessment

Weekly discussion
and feedback

Summative assessment

COMPONENT	WEIGHTING
Examination	50%
Coursework	50%
Individual	40%
Written assignments	15%
Written practical reports	20%
Oral presentation	5%
Group	10%
Written assignment	5%
Scientific poster development	5%

Graduate attributes and skills

Programme learning objectives (PLO) addressed

2

PLO 2 (Application of Scientific Methods and Data Analysis)

3

PLO 3 (Integrated Laboratory, Field and Technical Skills)

4

PLO 4 (Critical Thinking and Problem-Solving Skills)

5

PLO 5 (Sustainability and Responsible Practice)

Sustainability concept addressed

4

SDG 4 Quality Education

8

SDG 8 Decent Work and Economic Growth

Digital skills/software used (not limited to)

Word processing software (e.g. Microsoft Office)

Application software (e.g. R statistical program, Web browsers)

Communication software (e.g. Zoom, CANVAS)

Graphics software (e.g. Canva)

Academic databases and reference management software

Micro-credentialling option

No

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

No

Document details

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