

Module code

SPB-3301

Type of module

Undergraduate: Biological Sciences – Major Option

Biotechnology



Modular credits 4	Total student engagement 56 hours	Prerequisite SPB-1201 Diversity of Life OR SPB-1202 Organisms and Environment OR SPB-1203 Skills in Biological Sciences	Anti-requisite None
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Aims

To introduce students to basic concepts of genetic engineering in a relatively non-technical way as a foundation for studying emerging roles and implications of biotechnology in agriculture, food, medicine, industry and ecology.

Module learning outcomes (MLO)

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

MLO 1

Analyse biotechnology and genetic engineering.

MLO 2

Analyse the basic tools and techniques of genetic engineering.

MLO 3

Analyse the various roles and implications of biotechnology in agriculture, food, medicine, industry and ecology.

MLO 4

Evaluate the potential ethical dilemmas associated with biotechnology.

MLO 5

Analyse biological data and develop competence in bioinformatics skills.

Module contents

Microbial biotechnology

Plant biotechnology

Animal biotechnology

DNA fingerprinting and forensic analysis

Bioremediation

Aquatic biotechnology

Medical biotechnology

Assessment

60%

Examination

40%

Coursework

Examination
60%

Bioinformatic assignments
30%

10%

■ Examination — 60%

■ Bioinformatic assignments — 30%

■ Class test — 10%

Formative assessment	Summative assessment	
Weekly discussion and feedback	COMPONENT	WEIGHTING
	Examination	60%
	Coursework	40%
	Individual	40%
	Bioinformatic assignments	30%
	Class test	10%

Graduate attributes and skills

Programme learning objectives (PLO) addressed

1	PLO 1 (Fundamental Theoretical Knowledge in Biology)	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

2	SDG 2 Zero Hunger
3	SDG 3 Good Health and Well-Being
14	SDG 14 Life below Water

Digital skills/software used (not limited to)

- Microsoft Office software (e.g. Word, Excel, PowerPoint)
- Application software (e.g. Web browsers, public databases such as GenBank and PDB, cloud-based storage and file sharing platform)
- eLearning platforms (e.g. CANVAS, Zoom)

Micro-credentialling option No	Stackable towards GenBESTARI Undergraduate Degree Programme or other relevant Lifelong Learning Programmes No
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Document details

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