Liverpool John Moores University

Title:	INTRODUCTION TO BIOTECHNOLOGY
Status:	Definitive
Code:	**4110BCBMOL** (126535)
Version Start Date:	01-08-2021
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

Team	Leader
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Academic Level:	FHEQ4	**Credit Value:**	20	**Total Delivered Hours:**	56
Total Learning Hours:	200	**Private Study:**	144		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	36
Practical	9
Workshop	9

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	50	2
Practice	Practice	Practical assessment involving interpretation of laboratory data	50	

Aims

To introduce an overview in biotechnology and the main applications including

bioprocessing. How the biotechnology industry has developed in different fields.

Learning Outcomes

After completing the module the student should be able to:

1	Recognise the differentiation of biotechnology processes into white, green, red and blue fields of research, and describe the principles of these fields.
2	Describe the use of bioprocessing systems and their applications.
3	Interpret and present biotechnological data.
4	Present research findings as part of a group.

Learning Outcomes of Assessments

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

Exam	1	2	
Interpretation of lab data	1	3	4

Outline Syllabus

Overview in how biotechnology has become an important field nowadays.
Principles of White, Green, Red and Blue biotechnology.
Careers in biotechnology (lab and non-lab based).
The business of biotechnology, companies, finance and market for biotechnological applications, legislation, ethics and management.
Principles of bioprocessing operations and introduction to bioprocess development. Challenges associated.
Cell culture, plant, mammalian, microbial as examples of bioprocessing
Bioreactors and fermenter systems: industrial applications
Principles of the production of biopharmaceuticals and their role in gene therapy, regenerative medicine, microbiome engineering and immunology.
Biotechnology in agriculture and environment.

Learning Activities

Lectures, workshops, practical work.

Notes

The module will be delivered through a series of lectures, practicals, and workshops.