

## Current Topics in Biotechnology

### Module Information

2022.01, Approved

#### Summary Information

Module Code	6502YAUBIO
Formal Module Title	Current Topics in Biotechnology
Owning School	Pharmacy & Biomolecular Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

#### Teaching Responsibility

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

#### Learning Methods

Learning Method Type	Hours
Lecture	96

#### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-PAR	PAR	January	12 Weeks

#### Aims and Outcomes

Aims	The aim of the module is for students to develop an understanding of the importance and basic principles of plant biotechnology. Students will develop an understanding of the basic principles and techniques of plant molecular pharming and its application in the production of pharmaceuticals for medicine and secondary metabolites for industry. The module also aims to develop students' understanding of the potential of plant biotechnology in the improvement of crop yield and nutrition value, and in protection of the environment.
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## After completing the module the student should be able to:

### Learning Outcomes

Code	Number	Description
MLO1	1	Outline the history and explain the importance of plant biotechnology.
MLO2	2	Describe the principles and process of plant tissue and cell culture.
MLO3	3	Explain how and why the plant transformation and genetic engineering could be achieved.
MLO4	4	Discuss how plant genetic modification can be utilised to increase crop yield and nutrition.
MLO5	5	Discuss how plant genetic modification can be utilised to preserve plant diversity.
MLO6	6	Evaluate the strategies to produce biofuels through plant biotechnology.
MLO7	7	Discuss how plant biotechnology could be utilised in reduction of fertiliser and pesticide in agriculture.
MLO8	8	Discuss how plant genetic modification can be utilised to produce pharmaceuticals for treatment of cancer and other diseases.
MLO9	9	Discuss how plant biotechnology could be utilised in the production of valuable industrial biomaterials.

### Module Content

Outline Syllabus	The module will cover plant biotechnology including plant tissue and cell culture, plant genetic engineering and their potential applications in crop improvement. The module will also cover increased yields and nutrition values of crops, reduction in fertiliser and pesticide use, biofuel production, pharmaceuticals and biomaterials.
Module Overview	
Additional Information	The module is for students to develop an understanding of the principles and techniques of plant biotechnology, and applications in crop improvement, and in the pharmaceutical and biomaterial industry.

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Exam	Exam 1	33.5	2	MLO1, MLO2, MLO3
Exam	Exam 2	33.5	2	MLO4, MLO5, MLO6, MLO7
Presentation	Presentation	33	0	MLO8, MLO9

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Baoxiu Qi	Yes	N/A

**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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