Synthetic Biology and Bioengineering 2

Module Information

2022.01, Approved

Summary Information

Module Code	6107BCBMOL
Formal Module Title	Synthetic Biology and Bioengineering 2
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	25
Practical	15
Tutorial	5
Workshop	10

Module Offering(s)

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

Aims and Outcomes

Aims	To provide in-depth knowledge of current concepts and applications of synthetic biology and bioengineering with emphasis on tackling specific industrial, biomedical, and environmental challenges.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically discuss how synthetic biology principles are applied in aspects of biotechnology that require engineering of metabolic pathways.
MLO2	2	Evaluate new developments in the field of synthetic biology via critical appraisal of the literature.
MLO3	3	Design, model, and test a genetic circuit aimed at addressing an industrial, biomedical, or environmental problem.
MLO4	4	Evaluate critically and use different methods for communicating scientific data tailored to academic and industrial audiences.

Module Content

Outline Syllabus	1) Principles of metabolic pathway engineering2) Microbial cell factories and cell-free synthetic systems3) Minimal cells and synthetic genomes4) Biomedical applications of synthetic biology and bioengineering 5) Environmental applications and sustainability6) Ethical Issues in synthetic biology
Module Overview	This module provides in-depth knowledge of current concepts and applications of synthetic biology and bioengineering with emphasis on tackling specific industrial, biomedical and environmental challenges.
Additional Information	This module will provide personal development planning support for level 6 students on the Biotechnology programme. As tutorials are within the module students will have small group teaching sessions and individual feedback on tutorial work.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Examination	60	2	MLO2, MLO3, MLO4
Reflection	Report of Practicals Work	40	0	MLO1, MLO2, MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Femi Olorunniji	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings