

Synthetic Biology and Bioengineering 1

Module Information

2022.01, Approved

Summary Information

Module Code	5111BCBMOL
Formal Module Title	Synthetic Biology and Bioengineering 1
Owning School	Pharmacy & Biomolecular Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
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 the student with the basic concepts of synthetic biology and a good understanding of the foundational science that underpins synthetic biology, and develop appreciation for the importance of social responsibility in bioengineering.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Explain the core principles of molecular biology and their application in engineering biological systems.
MLO2	2	Explain how understanding of parts, systems and devices enable the design, build, test, learn model of synthetic biology.
MLO3	3	Explain the key foundational science that enables modern synthetic biology.
MLO4	4	Critically evaluate the design and operation of genetic circuits built from parts, devices, and systems.

Module Content

Outline Syllabus	1) Review of principles of molecular biology that underpins synthetic biology 2) Basic principles of synthetic biology and bioengineering 3) Foundational science enabling synthetic biology 4) Parts, devices, systems in synthetic biology 5) Role of Synthetic Biology in driving innovations in biotechnology 6) Synthetic biology and public engagement
Module Overview	This module provides you with the basic concepts of synthetic biology and a good understanding of the foundational science that underpins synthetic biology. It enables you to develop appreciation for the importance of social responsibility in bioengineering. This module will also provide personal development planning support for level 5 students on the Biotechnology programme.
Additional Information	This module will provide personal development planning support for level 5 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	MLO1, MLO2, MLO3, MLO4
Portfolio	Report of practical work	40	0	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
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