

Module code: MOD002970	Version: 9 Date Amended: 07/Apr/2025
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1. Module Title
Laboratory Techniques in Applied Bioscience

2a. Module Leader
Clett Erridge

2b. School
School of Life Sciences

2c. Faculty
Faculty of Science and Engineering

3a. Level
7

3b. Module Type
Standard (fine graded)

4a. Credits
30

4b. Study Hours
300

5. Restrictions			
Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	MSc DNA Analysis MSc Applied Bioscience		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module is predominately laboratory-based, offering you the opportunity to gain hands-on experience in a wide range of molecular and cellular techniques used in applied bioscience. Throughout the trimester, lectures will provide you with the theoretical background and principles behind the practical methodologies you will be working with in the laboratory sessions. Your laboratory work will include a wide range of the techniques, including DNA analysis, protein analysis, microbiology, cell culture, and other molecular biology techniques. You will also learn how to maintain thorough and accurate records, demonstrate Good Laboratory Practice (GLP) and hone your scientific communication skills. In addition, you will learn the application of bioinformatics analysis, including how to analyse and edit sequence data, interpret results using phylogenetics and the use of online genetic databases like the NCBI's GenBank. The aim is to equip you with both theoretical understanding and practical experience in a number of multi-disciplinary methods and applications of techniques in bioscience, which are particularly relevant to medical diagnostics. Furthermore, you will cover the core requirements and principles for laboratory work that apply universally across all laboratory-based disciplines, ensuring you develop a strong foundation for your future.

6b. Outline Content

- Cell culture
- Protein analysis
- Microbiology
- Molecular Biology
- Bioinformatics
- Other appropriate techniques that become available as new expertise is introduced

6c. Key Texts/Literature

The reading list to support this module is available at: <https://readinglists.aru.ac.uk/>

6d. Specialist Learning Resources

Students have access to a wide range of full text E-journals through the Anglia Ruskin University digital library. In addition to the main University Library and Student Resource Centre, where students have access to computer facilities. All students have their own email address and full internet and VLE access. Students will also make full use of the modern and well equipped molecular laboratories.

7. Learning Outcomes (threshold standards)		
No.	Type	On successful completion of this module the student will be expected to be able to:
1	Knowledge and Understanding	Demonstrate a thorough knowledge of the theory and procedures of a broad range of laboratory techniques used to study bioscience.
2	Knowledge and Understanding	Explain and apply the procedures that are used for a range of molecular and cellular techniques.
3	Knowledge and Understanding	Recognise, investigate and produce results for specific scientific insight into the material under investigation.
4	Intellectual, practical, affective and transferrable skills	Acquire effective and appropriate skills in communicating accurate laboratory data to colleagues in accordance with appropriate legislation, protocols and guidelines and be able to create and maintain such record.
5	Intellectual, practical, affective and transferrable skills	Instigate and demonstrate Good Laboratory Practice (GLP) in a working laboratory, with a research group in order to solve a scientific problem.

8a. Module Occurrence to which this MDF Refers				
Year	Occurrence	Period	Location	Mode of Delivery
2026/7	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	Hours	Learning Outcomes	Details of Duration, frequency and other comments
Lectures	0	None	None
Other teacher managed learning	96	1,2,3,5	12 weeks x 2 x 4 hrs practicals per week
Student managed learning	204	2,3,4	Background reading, online activities, preparation for lectures and practicals, and completion of assessments
TOTAL:	300		

9. Assessment for the above Module Occurrence					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Coursework	1-4	40 (%)	Fine Grade	40 (%)
Practical: Laboratory Portfolio; Up to 2000 words Portfolio of methods, results & analysis based on laboratory work;					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
011	Coursework	3-5	60 (%)	Fine Grade	40 (%)
Report: Laboratory report in form of paper 4000 words					

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:

(a) achieve the qualifying mark for each element of fine graded assessment as specified above

(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]