MODULE DESCRIPTOR

Module Title

Bioanalytical Skills II

Reference	PL3189	Version	1
Created	October 2022	SCQF Level	SCQF 9
Approved	June 2023	SCQF Points	30
Amended		ECTS Points	15

Aims of Module

To provide students with the ability to carry out and evaluate bioanalytical laboratory-based experiments involving advanced techniques and procedures and to further advance laboratory competence and scientific communication.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Demonstrate the ability to undertake health and safety risk assessments appropriately.
2	Use a range of advanced bioanalytical techniques safely and accurately to design and implement appropriate experimental procedures to address given scientific problems or questions.
3	Demonstrate accurate record-keeping of experimental procedures, including mathematical analysis and interpretation of data obtained, and appropriate identification of any sources of error and uncertainty.
4	Communicate both orally and in writing the results and conclusions of given experiments.

Indicative Module Content

Laboratory safety and management. Preparation of risk assessments and COSHH forms. Keeping accurate records. Data handling and presentation. Advanced statistics. Preparation of solutions and dilutions. Accurate use of balances and pipettes. Microbiological techniques: principles and applications. Processing of biological samples. Confocal and multiphoton microscopy: principles and applications. Electrophoresis: principles and applications. Calibration. Colorimetry, Fluorimetry and spectrophotometry: principles and applications. Immunological Methods: principles and applications. Electroanalytical Techniques. Chromatography. Cell culture. Development of communication skills, group skills and time management skills.

Module Delivery

This is a laboratory-based module supported by tutorials/workshops, online support material and guided reading.

		Module Ref:	PL3189 v1

Indicative Student Workload		Full Time	Part Time
Contact Hours		70	N/A
Non-Contact Hours		230	N/A
Placement/Work-Based Learning Experience [Notional] Hours		N/A	N/A
TOTAL		300	N/A
Actual Placement hours for professional, statutory or regulatory body			

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4

Description: Portfolio competencies covering a range of practical, analytical and communication competencies relevant to professional laboratory practice.

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

A number of portfolio-based competencies are assessed throughout this module.

Module Grade	Minimum Requirements to achieve Module Grade:
Pass	A satisfactory performance in a set of laboratory-based competencies.
Fail	An unsatisfactory performance in a set of laboratory-based competencies.
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	Successful completion of Stage 2 or equivalent.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1 BLANN, A.D. 2018. Data Handling and Analysis. 2nd Edition. OUP.

2 MATTHEWS, J.R. and MATTTHEWS, R.W. 2007. Successful Scientific Writing: A Step-by-Step Guide for the Biological and Medical Sciences. 1st Edition. Cambridge University Press.

3 MEAH, M.S, and KEBEDE-WESTHEAD, E. 2012. Essential Laboratory Skills for Biosciences. 1st Edition. Hoboken Wiley.