MODULE DESCRIPTOR

Module Title

Omic Technologies

Reference	PL4920	Version	2
Created	January 2024	SCQF Level	SCQF 10
Approved	June 2023	SCQF Points	15
Amended	August 2024	ECTS Points	7.5

Aims of Module

To enable students to appreciate the relevance and application of a number of Omic technologies in the analysis of biomolecules in research and professional practice.

Learning Outcomes for Module

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

1	Discuss the principles of Omics technologies.
2	Discuss critically the application of a variety of omics technologies.
3	Discuss critically the potential impact of a variety of omics technologies.

Indicative Module Content

Genomics, metabolomics, nutrigenomics and proteomics; epigenetics. Genomics will include principles and applications of DNA sequencing, DNA microarrays and their relevance in targeted gene expression and function analysis. Genomic, transcriptomic and proteomic methods used to analyze and study chromosomes and DNA. Proteomics will include 2-D gel electrophoresis, protein arrays and their relevance in targeted protein expression and function analysis. The application of molecular biology, bioinformatics and omics technologies in health and disease, pharmacogenetics, food science, conservation and plant science, and personalized medicine. Genetic testing and associated ethical issues.

Module Delivery

This module is delivered by lectures, tutorials and seminars.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	24	N/A
Non-Contact Hours	126	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	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:	Practical Exam	Weighting:	100%	Outcomes Assessed:	1, 2, 3
Description:	Oral presentation				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

Component 1 (PE1) comprises 100% of the module grade. A minimum of a Grade D is required to pass the module.

Module Grade	Minimum Requirements to achieve Module Grade:
A	A
B	B
C	C
D	D
E	E
F	F
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None, in addition to SCQF level 10 entry requirements or equivalent.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1	DALE, J.W. and VON SCHANTZ, M. 2007. From Genes to Genomes, Concepts and Applications of DNA Technology. 2nd Edition. Wiley.
2	PAGEL, M. and POMIANKOWSKI, A. 2008. Evolutionary Genomics and Proteomics. 1st Edition. Sinauer.
3	LESK, A.M. 2019. Introduction to Bioinformatics. 5th Edition. Oxford University Press.
4	FERGUSON, L.R. 2016. Nutrigenomics and Nutrigenetics in Functional Food and Personalized Nutrition. 1st Edition. CRC Press.