MODULE DESCRIPTOR

Module Title

Forensic DNA Profiling

Reference	PL4602	Version	1
Created	October 2023	SCQF Level	SCQF 10
Approved	March 2018	SCQF Points	15
Amended	September 2023	ECTS Points	7.5

Aims of Module

To provide the students with up to date concepts and principles of forensic DNA profiling and to understand the relevance of population genetics.

Learning Outcomes for Module

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

1	Examine the specific relevance of DNA profiling in forensic science, in particular the importance of statistical calculations.
2	Evaluate appropriate methodologies for recovery of biological evidence for DNA profiling.
3	Critique the utilisation of a chosen method of DNA profiling in a specific investigation.
4	Examine the relevance of population genetics in forensic science, and in population and evolution studies.

Indicative Module Content

DNA Isolation, purification and analysis, PCR (including multiplexing), STRs, SNPs, sequencing, electrophoresis. Recovery of biological evidence. Laboratory anti-contamination procedures. Interpretation and reporting of DNA results. Hardy-Weinburg and allele frequencies, population statistics and databases used in DNA profiling. This module aligns with United Nations Sustainable Development Goal 16: Peace, Justice and Strong Institutions. Students learn how to maintain the integrity of evidence during forensic examination, analysis, and interpretation, contributing towards a fair judicial system and strong institutions.

Module Delivery

This is a lecture based module supplemented with student centred learning activities.

Module Ref:	PL4602 v1

Indicative Student Workload	Full Time	Part Time
Contact Hours	40	N/A
Non-Contact Hours	110	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:	Examination	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4
Description:	Closed book written examination, assessing knowledge of theoretical and practical aspects of the module, including a lab-related critical assessment question.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

Component 1 (Examination) comprises 100%. 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	Successful completion of Stage 3 Forensic and Analytical Science or equivalent.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1	GRIFFITHS, A.J.F., WESSLER, S.R., CARROLL, S.B., and DOEBLEY, J. *An Introduction to Genetic Analysis. International Student Version.* Current Edition. W H Freeman.
2	GOODWIN, W., LINACRE, A., HADI, S. *An Introduction to Forensic Genetics* Current Edition. Wiley-Blackwell.
3	ELKINS, K.M. *Forensic DNA Biology: A Laboratory Manual.* Current Edition. Academic Press.
4	BUTLER, J.M. *Fundamentals of Forensic DNA Typing.* Current edition. Academic Press.
5	HARTL, D.L. and CLARK, A.G. *Principles of Population Genetics.* Current edition. Sinauer Associates.