Molecular Bioscience for Forensic Sciences

Module Information

2022.01, Approved

Summary Information

Module Code	4105FSBMOL
Formal Module Title	Molecular Bioscience for Forensic Sciences
Owning School	Pharmacy & Biomolecular Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

Learning Methods

Learning Method Type	Hours
Lecture	37
Practical	18
Tutorial	5

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	To introduce biomolecular science to forensic science students providing the building blocks for further study in this area.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description

MLO1	1	Demonstrate knowledge of tissue and cell structure, cellular processes and biomolecules.
MLO2	2	Perform a number of biochemical and cellular procedures
MLO3	3	Report experimental findings appropriately

Module Content

Outline Syllabus	Proteins - Structure and function including enzymes, regulation and control. Interaction with toxic substances and with degradation/ decomposition.Cell structure and function including general classifications. Cytoskeleton, mitochondria, lysosomes and peroxisomes - other organelles. Cell cycle. Structure and function of skin.Membrane structure, transportation, receptor/ hormonesDNA- structure and function both eukaryote and prokaryote. DNA folding and packaging, DNA replication, transcription/translation including promotersHistology - basic stains and use in forensic pathology, epithelial tissues, brain, blood, bone, muscle and connective tissue. Changes in tissues following death for example rigor mortis.Genetics- inheritance patterns, ploidy, chromosome structure and changes/ mutation, Hardy Weinberg equilibrium. Introduction to DNA profiling.Metabolism- Understanding of anabolism and catabolism, glycolysis, Krebs cycle, electron transport chain. Metabolism and detoxificationBasic microbiology - Introduction to microbiology as it relates to forensic science
Module Overview	This module will introduce you to biomolecular science providing the building blocks for further study in this area.
Additional Information	To introduce forensic science students to appropriate biomolecular information

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	exam	60	1	MLO1
Practice	Practice	40	3	MLO3, MLO2

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Jari Louhelainen	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings