

Liverpool John Moores University

Title: MOLECULAR BIOSCIENCE FOR FORENSIC SCIENCES
Status: Definitive
Code: **4105FSBMOL** (122128)
Version Start Date: 01-08-2021

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
Jari Louhelainen	Y
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Academic Level: FHEQ4 **Credit Value:** 20 **Total Delivered Hours:** 61

Total Learning Hours: 200 **Private Study:** 139

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	37
Practical	18
Tutorial	5

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	60	1
Practice	Practice	Practice	40	3

Aims

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

Learning Outcomes

After completing the module the student should be able to:

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

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

exam	1	
Practice	3	2

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/ hormones DNA- structure and function both eukaryote and prokaryote. DNA folding and packaging, DNA replication, transcription/translation including promoters Histology - 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 detoxification Basic microbiology - Introduction to microbiology as it relates to forensic science

Learning Activities

lectures, problem based learning workshops, practical classes, self-study

Notes

To introduce forensic science students to appropriate biomolecular information

