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Title: Biomolecular Science for Forensic scientists  
 Status: Definitive  
 Code: **4006FSBMOL** (120095)  
 Version Start Date: 01-08-2016  
 Owing School/Faculty: Pharmacy & Biomolecular Sciences  
 Teaching School/Faculty: Pharmacy & Biomolecular Sciences

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**Academic Level:** FHEQ4      **Credit Value:** 24      **Total Delivered Hours:** 62  
**Total Learning Hours:** 240      **Private Study:** 178

**Delivery Options**

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	41
Practical	18
Workshop	2

**Grading Basis:** 40 %

**Assessment Details**

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	exam	Final module exam	50	1
Test	Ass2	Practical test	25	3
Report	Ass 3	Practical report	25	

## 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:

Final module exam	1	
Practical test	2	3
Practical report	2	3

## 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