

Liverpool John Moores University

Title: Medical and Molecular Biochemistry
Status: Definitive
Code: **5014BCBMOL** (117378)
Version Start Date: 01-08-2019

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

Team	Leader
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Academic Level: FHEQ5 **Credit Value:** 24 **Total Delivered Hours:** 61.5
Total Learning Hours: 240 **Private Study:** 178.5

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	40
Practical	12
Seminar	3
Workshop	5

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	AS1	practical report/test	20	
Report	AS2	Practical test/report	20	
Exam	Exam	final exam	60	1.5

Aims

To provide a detailed understanding of the molecular and medical biochemistry mechanisms that are applicable to human disease states and to introduce and develop subject specific practical skills.

Learning Outcomes

After completing the module the student should be able to:

- 1 Understand how human metabolic control mechanisms operate
- 2 Demonstrate an understanding of the principles of Clinical Biochemistry
- 3 Demonstrate a knowledge and understanding of Replication, Transcription and Translation processes in eukaryotes
- 4 Demonstrate familiarity with the mechanisms of DNA damage and repair and their contribution to human genetic disease
- 5 Demonstrate familiarity with and a basic understanding of the techniques used in Recombinant DNA Technology
- 6 Demonstrate an appreciation of the value of assaying serum proteins as markers of disease

Learning Outcomes of Assessments

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

Practical test DNA	5				
Practical test/report	6				
Exam	1	2	3	4	

Outline Syllabus

Relationship of molecular biology to eukaryotic organisms (DNA, RNA structure, replication, transcription and translation).

DNA damage and repair and its impact in human disease states (using a range of biochemical examples which may include: G6PD, huntingtons, Fragile -X, Xeroderma pigmentosum, etc).

Properties of membranes (transport active/passive, etc) and associated disease states (cystic fibrosis).

General principles of metabolic control: Liver, muscle (glycogen, triglycerides).

Metabolic adaptations in starvation, exercise and diabetes mellitus. Leptin and control of body weight.

Biosynthesis, metabolism and fate of cholesterol. Plasma lipoproteins, hyperlipoproteinaemias and occlusive vascular disease.

Biochemical monitoring of health and disease (clinical sample, electrolyte balance, acid base regulation, plasma proteins and serum enzymes).

Learning Activities

The student learning experience will be met through: workshops, seminars, lectures and practical sessions.

Notes

The emphasis of the module will be to build upon the basic concepts of molecular and biomedical processes in eukaryotes. The examples used in the module will be directly linked to human disease states wherever possible. Basic diagnostic techniques, including molecular methods, will be covered as appropriate.