

Liverpool John Moores University

Title: Advanced Molecular and Cellular Biology
Status: Definitive
Code: **6014BCBMOL** (119015)
Version Start Date: 01-08-2012

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

Team	Leader
Elaine Hemers	Y

Academic Level: FHEQ6
Credit Value: 24.00
Total Delivered Hours: 48.00
Total Learning Hours: 240
Private Study: 192

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	38.000
Tutorial	2.000
Workshop	5.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	ASS1		30.0	
Test	ASS2		20.0	2.00
Exam	EXAM		50.0	3.00

Aims

To provide students with a state of the art knowledge of central aspects of cell biology, molecular biology, and biochemistry and to encourage the development of analytical skills.

Learning Outcomes

After completing the module the student should be able to:

- LO1 Discuss important topics in cell biology, molecular biology, structural biochemistry, and proteins at an advanced level
- LO2 Analyse experimental data
- LO3 Read, interpret and critique scientific literature

Learning Outcomes of Assessments

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

Report	LO 3
Test	LO 2
EXAM	LO 1

Outline Syllabus

- 1) *Cell signalling - general features of receptors, mode of action of signalling molecules with intracellular receptors, signal transduction pathways.*
- 2) *The molecular control of cell division and cell death, interaction of these in normal and tumour cells.*
- 3) *Growth factors and mitogens: general features, mechanisms of action and role in cell proliferation, differentiation and cell death. Methods used to study changes due to growth factors/mitogens.*
- 3) *Role of cytoskeleton in maintaining structure and mechanical properties of cells. Influence of extracellular matrix on the morphology and biochemistry of cells. Response of cells to wound healing. Methods used to study the cytoskeleton.*
- 4) *Molecular biology - properties of nucleic acids, genome organisation, gene families, eukaryotic gene expression and its control, bioinformatic methods for analysis.*
- 5) *Proteins: Principles of investigation, investigating/exploiting protein interactions, omics.*

Learning Activities

Lectures, workshops, and tutorials

References

Course Material	Book
Author	Alberts, B., Bray, D., Lewis, J., Raff, M., Robers, K. and

	Watson, J.D.
Publishing Year	2008
Title	Molecular Biology of the Cell
Subtitle	
Edition	5th
Publisher	Garland
ISBN	0815329717

Notes

Papers will be added to Blackboard as and when needed for each lecture block.