

Liverpool John Moores University

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Title: ADVANCED CELL BIOLOGY
Status: Definitive
Code: **6007BCBMOL** (101451)
Version Start Date: 01-08-2011

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

Team	Leader
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Academic Level: FHEQ6
Credit Value: 24.00
Total Delivered Hours: 40.00

Total Learning Hours: 240
Private Study: 200

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	33.000
Online	2.000
Workshop	2.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	3 hour paper with 3 essay-style questions to be answered from a choice of 6.	70.0	3.00
Test	AS2	1 data analysis test	10.0	

Aims

To provide an understanding of important current aspects of cell biology at an advanced level.

Learning Outcomes

After completing the module the student should be able to:

- 1 Discuss important topics in cell biology.
- 2 Analyse experimental data.
- 3 Read and interpret the scientific literature.

Learning Outcomes of Assessments

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

EXAM	1	
Data analysis	2	3

Outline Syllabus

The molecular control of cell division and cell death (apoptosis), interaction of these processes in normal and tumour cells, growth factors and mitogens. Proteins covered include the products of tumour suppressor genes and cellular proto-oncogenes, cyclins, cyclin-dependent kinases and caspases.

Growth factors and mitogens: general features, role in cell growth and differentiation. Mechanisms of action.

Role of the cytoskeleton in maintaining the structure and mechanical properties of cells. Influence of the extracellular matrix on the morphology and biochemistry of cells. Response of cells to wound healing. Methods used to study the cytoskeleton.

Intercellular signalling: general features of receptors, receptor characterisation and classification. Mode of action of signalling molecules with intracellular receptors. Signal transduction, major pathways for intracellular signalling.

Chaperones: constitutive and induced roles, role in folding of nascent proteins and translocation of proteins across ER. Mechanisms of action of Hsp60 and Hsp70. Disease states caused by protein misfolding.

Learning Activities

Lectures and 2 workshops

References

Course Material	Book
Author	Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J.D.
Publishing Year	2008
Title	Molecular Biology of the Cell.
Subtitle	
Edition	5th ed.
Publisher	Garland.
ISBN	0815329717

Course Material	Book
Author	Alberts, B., Bray, D., Johnson, A., Lewis, J., Raff, M., Roberts, K. and Walter, P.
Publishing Year	2004
Title	Essential Cell Biology
Subtitle	
Edition	
Publisher	Garland
ISBN	0815329717

Course Material	Book
Author	Lund, P.
Publishing Year	2001
Title	Molecular Chaperones in the Cell
Subtitle	
Edition	
Publisher	Oxford University Press
ISBN	

Notes

This module will provide an understanding of important current aspects of cell biology at an advanced level.