Liverpool John Moores University

Title:	MOLECULAR CELL BIOLOGY
Status:	Definitive
Code:	**5005BCBMOL** (101439)
Version Start Date:	01-08-2011
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

Team	Leader
Kenneth Ritchie	Y
Suzzanne McColl	

Academic Level:	FHEQ5	**Credit Value:**	12.00	**Total Delivered Hours:**	22.50
Total Learning Hours:	120	**Private Study:**	97		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	20.000
Seminar	1.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	In class written essay	60.0	1.50
Test	AS2	In class critical review of a published research paper	40.0	1.00

Aims

Molecular Cellular Biology is core for second year students of Biochemistry and an option for students of Medical Biochemistry, Biochemistry & Forensic Science, Forensic science, Microbiology, and Biomedical Science. It aims to teach a number of currently important topics in cell biology to "cutting-edge" level and to improve your analytical skills through the learning of reading skills.

Learning Outcomes

After completing the module the student should be able to:

1 Describe the pathways by which proteins are sorted in cells.
2 Explain the roles and basic mechanisms of cellular communication.
3 Describe the basic pathways controlling cell growth and cell death.
4 Discuss the molecular basics of tissue homeostasis and development.
5 Analyze and interpret data from experimental reports (papers) and communicate conclusions and critics about the work in the form of written reports.
6 Encourage student interactions both during lectures and outside when preparing homework/critical review.

Learning Outcomes of Assessments

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

EXAM	1	2	3	4	5
In-class test	6				

Outline Syllabus

Intracellular compartments and transport: Protein sorting, vesicular transport, secretory pathway, endocytic pathways.
Intra- and inter-cellular communication: The roles of cellular communication, types and functions of cell adhesion molecules, roles and types of signal transduction pathways.
Cell cycle control and cell death: Molecular control of mitosis, types of cell death, molecular control of apoptosis.
Tissue maintenance and renewal: Concept of tissue homeostasis, molecular control of development, the roles of cellular differentiation.
Experimental approaches to cell biology: Advances in methodologies for cell biology.

Learning Activities

1 Prepare homework on a weekly basis.
2 Acquire new professional skills.

References

Course Material	Book
Author	Alberts, B. et al.
Publishing Year	2010
Title	Essential Cell Biology.

Subtitle	
Edition	
Publisher	Garland Publishing.
ISBN	

Course Material	Book
Author	Alberts, B. et al.
Publishing Year	2008
Title	Molecular Biology of the Cell.
Subtitle	
Edition	5th Edition
Publisher	Garland Publishing.
ISBN	

Course Material	Book
Author	Lodishm, H., Darnell, J., Baltimore, D. et al.
Publishing Year	2008
Title	Molecular Cell Biology.
Subtitle	
Edition	6th Edition
Publisher	W.H. Freeman.
ISBN	

Course Material	Book
Author	Karp, G.
Publishing Year	1996
Title	Cell and Molecular Biology.
Subtitle	
Edition	
Publisher	John Wiley and Sons Inc.
ISBN	0471599131.

Course Material	Book
Author	Becker et al.
Publishing Year	2005
Title	The World of the Cell
Subtitle	
Edition	6th Edition
Publisher	Pearson Education
ISBN	

Course Material	Book
Author	Morgan, D.O.
Publishing Year	2007
Title	The Cell Cycle: Principles of Control
Subtitle	
Edition	

Publisher	Oxford University Press
ISBN	31111012047708

Course Material	Book
Author	Hancock, J.T.
Publishing Year	2005
Title	Cell Signalling
Subtitle	
Edition	2nd Edition
Publisher	Oxford University Press
ISBN	31111011298807

Notes

This module will build on the concepts introduced in Level 1 Cell Biology and also introduce students to cutting edge areas of Cell Biology. Through this module, they will learn more about the different cellular mechanisms involved during cell communications, cell division and cell death. Furthermore, this module will encourage student's participation and will teach them new professional/research critical skills.