

Liverpool John Moores University

Title: Topics In Biotechnology
Status: Definitive
Code: **6013BCBMOL** (118938)
Version Start Date: 01-08-2012

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: 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
Practical	7.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Practice	Report		50.0	
Exam	Exam		50.0	3.00

Aims

To provide a comprehensive understanding of the developments made and the latest techniques employed for the molecular analysis of eukaryotic organisms.

Learning Outcomes

After completing the module the student should be able to:

- LO1 Consider the moral, ethical and commercial implications of eukaryotic DNA technology
- LO2 Apply the range of gene cloning and selection techniques to solve specific problems, and design and execute a simple cloning experiment
- LO3 Analyze, evaluate and interpret relevant information using appropriate analytical and bioinformatics tools

Learning Outcomes of Assessments

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

Practical Report	LO 3	
Exam	LO 1	LO 2

Outline Syllabus

Historical perspectives: the development of cloning techniques.

Applications: in eukaryotic systems: polymerase chain reactions in vitro and site-directed mutagenesis; gene targeting; DNA sequencing and micro-array technology; DNA fingerprinting (restriction fragment length polymorphism, STR, SNP's); commercial production of pure products from recombinant systems; site-directed mutagenesis; cloning in yeast.

Transgenic systems: engineering in plants using Ti plasmid viral vectors; foreign gene expression; introduction herbicide and pesticide resistance into crop plants; gene therapy.

Learning Activities

Lectures and Practicals

References

Course Material	Book
Author	Lewin, B
Publishing Year	2007
Title	Genes IX
Subtitle	
Edition	9th
Publisher	Jones & Bartlett Publishers UK
ISBN	0-7637-4063-2

Notes

The emphasis of this module will be to provide the student with a comprehensive knowledge of the theory, applications and developments in recombinant DNA technology. In particular, reference to yeast, plant and animal systems will be made.