Liverpool John Moores University

Title:	GENETICS
Status:	Definitive
Code:	**4010BMBMOL** (113095)
Version Start Date:	01-08-2011
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

Team	Leader
Elaine Hemers	Y
Richard Brown	

Academic Level:	FHEQ4	**Credit Value:**	12.00	**Total Delivered Hours:**	29.00
Total Learning Hours:	120	**Private Study:**	91		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	24.000
Practical	4.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	50.0	1.00
Test	AS2	Phase Test	50.0	

Aims

To provide an introduction to the principles genetics and the science of inheritance.

Learning Outcomes

After completing the module the student should be able to:

1 Describe Mendelian and non-Mendelian inheritance in eukaryotes.
2 Interpret patterns of inheritance from outcross experiments.
3 Recall the main theories accounting for the presence of genetic variation in populations.
4 Describe how evolutionary pressures act on this diversity to produce evolutionary change.

Learning Outcomes of Assessments

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

EXAM	1	2	3	4
CW	1	2		

Outline Syllabus

Mendelian genetics: mono and dihybrid crosses, modifications to Mendelian ratios, sex determination and linkage, probabilities and statistics, chromosomal mapping, cytogenetics, variations in chromosome number and Human Genome Project, non-Mendelian inheritance, human genetic disease.

Population genetics: Hardy-Weinberg equilibrium, neutral theory of drift, genetic analysis of populations.

Evolutionary genetics: Darwinian and neo-Darwinian evolution, evolution and speciation, mechanisms of cladogenesis, maintenance of polymorphisms, altruism, mimicry, kin selection, inclusive fitness, grand patterns of evolution.

Learning Activities

Module delivered using lectures and practicals. In-class phase tests are used at key stages within the module.

References

Course Material	Book
Author	Klug, W.S., Cummings, M.R., and Spencer, C.A.
Publishing Year	2009
Title	Concepts of Genetics
Subtitle	
Edition	9th Edition
Publisher	Pearson Benjamin Cummings
ISBN	9780321540980

Notes

This module will provide an introduction to genetics and evolutionary theory.