

Liverpool John Moores University

Title: APPLICATIONS OF GENETICS IN HEALTH AND DISEASE
Status: Definitive
Code: **6203NATSCI** (122186)
Version Start Date: 01-08-2021

Owning School/Faculty: Biological and Environmental Sciences
Teaching School/Faculty: Biological and Environmental Sciences

Team	Leader
Robbie Rae	Y
Kyoko Yamaguchi	
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Sally Williamson	

Academic Level: FHEQ6 **Credit Value:** 20 **Total Delivered Hours:** 52
Total Learning Hours: 200 **Private Study:** 148

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	26
Practical	22
Workshop	2

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	50	2
Report	RPT	Practical write-up	50	

Aims

This module aims to investigate how genetics and genomics can be used to understand a range of physiological processes in health and disease.

Learning Outcomes

After completing the module the student should be able to:

- 1 Evaluate how genomics can be used in personalised medicine, cancer, epigenetics and regenerative medicine.
- 2 Discuss the genetic mechanisms involved in regulating physiological processes such as ageing, development, cancer and behaviour.
- 3 Critically evaluate the role of microbiota in regulating human and animal health and the techniques that can be used to understand these bacterial species.
- 4 Utilise genetic databases (e.g. Genbank) for identification of species from DNA sequence data

Learning Outcomes of Assessments

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

Examination	1	2
Practical Report	3	4

Outline Syllabus

The role of genetics and genomics in understanding major physiological processes such as cancer, behaviour, development and ageing will be discussed as well as how epigenetics and resident bacterial microflora (which is itself shaped by an individual's immunity and hence genetics) may alter these processes. The aims and learning outcomes of this module will be addressed through a series of lectures that reflect the contemporary research interests of individual staff members.

Learning Activities

This module will be delivered using a combination of lectures, practicals and workshops.

Notes

This module provides students with an appreciation of some modern genetic and genomic techniques that are regularly used in studies of health and disease. It is highly recommended that students should attend Genes and Genomes (5013NATSCI) before taking this module.