Liverpool John Moores University

Title:	Applications of Genetics in Health and Disease
Status:	Definitive
Code:	**6502YAUZOO** (127899)
Version Start Date:	01-08-2021
Owning School/Faculty:	Biological and Environmental Sciences
Teaching School/Faculty:	Biological and Environmental Sciences

Team	Leader
Gareth Weedall	Y

Academic Level:	FHEQ6	**Credit Value:**	20	**Total Delivered Hours:**	58
Total Learning Hours:	200	**Private Study:**	142		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	28
Practical	26

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Presentation	Poster	Poster covering the practical and lecture material covering Methodological Approaches in Genetics	32	
Exam	Exam	Written exam covering the practical and lecture material for the applications of Genetics in Human Health and Disease	34	2
Exam	Exam	Written exam covering the Applications of Genetics in Animals and Plant Science lecture and practical material	34	2

Aims

This module aims to teach students about methodological approaches in genetics and genomics, applicable to the study of health and disease of humans, animals and plants. Understanding the genetics of organisms is important to understand their biology, as genetic factors influence major physiological processes and phenotypes. In addition, epigenetics (non-genetic modifications to the genome) and meta-genetics (the genetics of associated organisms such as bacterial communities) play important roles. A range of methodological approaches can be applied to study these things and these will be covered in the module. Genetic factors influence major physiological processes such as cancer, behaviour, development and ageing in humans (and biological model systems). Therefore, understanding these is important to understand human, animal and plant biology and health.

Learning Outcomes

After completing the module the student should be able to:

1	Evaluate the different methodological approaches in genetic/genomic study of health and disease
2	Evaluate the roles of genetics and genomics in health and disease processes.
3	Discuss the genetic mechanisms involved in biological processes connected to health and disease.
4	Evaluate the roles of genetics and genomics in animal and plant biology.
5	Discuss the genetic mechanisms involved in biological processes connected to animals and plant science

Learning Outcomes of Assessments

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

Poster	1	2	3
Written exam	1	2	3
Written exam	4	5	

Outline Syllabus

This module aims to investigate how genetics and genomics can be applied to the study of humans, animals and plants. Genetic factors influence major physiological processes and phenotypes. In addition, epigenetics (non-genetic modifications to the genome) and meta-genetics (the genetics of associated organisms such as bacterial communities) play important roles. Therefore, understanding these is important to understand animal, human and plant biology. The aims and learning outcomes of this module will be addressed through a series of lectures that reflect contemporary themes in the field. Students will learn about the roles of genetics in the study of health.

Learning Activities

The module content will be delivered through lectures and practical activities, with lectures on appropriate theoretical subject knowledge supporting and supported by appropriate practical applications.

Notes

This module is for individuals to develop an understanding of the applications of genetics in human, health and disease.This module is also for individuals to develop an understanding of the approaches to studying genetics in human, animal and plant biology.