Module Specification

Genetics

Version: 2025-26, v3.0, Approved

Contents

Part 1: Information

Module title: Genetics

Module code: USSKFQ-15-2

Level: Level 5

For implementation from: 2025-26

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Cells, Biochemistry and Genetics 2024-25, Human Biological Systems 2024-25

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Genetics is a cornerstone of modern science, offering profound insights into the mechanisms of life by studying the key molecules: DNA, RNA and proteins. The module 'Genetics' will cover the study of genes and function; the techniques that enable their study; and inherent genetic variation and change within organisms.

Students must have passed one of USSKA4-30-1 Cells, Biochemistry & Genetics OR USSJRU-30-1 Human Biological Systems in order to take this module.

Features: Not applicable

Educational aims: The module aims to develop students' understanding of genetic material, how it is studied, the processes it undergoes, and applications and ethics arising from genetic research. Practically, students will gain valuable experience of techniques routinely used for the study of genetic material, raising the level of their graduate skills and employability.

Outline syllabus: The indicative syllabus of the module is as follows:

A review of our current understanding of our genetic blueprint and up-to-date techniques which have enabled this analysis, as well as the significance such knowledge has for both health and society.

The structure, organisation, gene expression and regulation of prokaryotic and eukaryotic genomes.

A review of the current techniques used for the isolation, manipulation, cloning and characterisation of genes and their products within organisms, with a focus on human genome.

The current and potential applications of genetics and the ethical issues raised.

An appreciation of the research process through practical lab experience of molecular genetics and data interpretation.

Part 3: Teaching and learning methods

Teaching and learning methods: The module will be delivered through key lecture topics and themes providing opportunities to link knowledge to current publications and news items to encourage independent study. Practical experience and skills will be gained though the embedded extended research practicals.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Understand the organisation and structure of genetic material, the expression of genes and current applications of genetics.

MO2 Gain practical experience of techniques used in molecular genetics and interpret data obtained from laboratory practical sessions.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/usskfq-15-2.html

Part 4: Assessment

Assessment strategy: Assessment: Laboratory report (2500 words)
The assessment comprises a laboratory report providing the opportunity to assess broad principles of genetics theory, as well as the understanding of knowledge gained from practical laboratory sessions. Students will be required to complete and maintain a practical lab booklet as they work through the practical sessions, collecting and interpreting their own data. A template will be provided with sections where students must apply theoretical background delivered in the lectures that are linked to each practical session.
Feedback will be provided through support in the practical sessions and a dedicated coursework support session.

Assessment tasks:

Laboratory Report (First Sit)
Description: Laboratory Report (2500 words)

Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Laboratory Report (Resit)
Description: Laboratory Report (2500 words)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Biological Sciences {Foundation} [Frenchay] BSc (Hons) 2023-24

Biological Sciences {Foundation} [Frenchay] MSci 2023-24

Forensic Science {Foundation} [Frenchay] BSc (Hons) 2023-24

Forensic Science {Foundation} [Frenchay] MSci 2023-24

Forensic Science [Frenchay] - WITHDRAWN MSci 2024-25

Forensic Science [Frenchay] BSc (Hons) 2024-25

Biological Sciences [Frenchay] BSc (Hons) 2024-25

Biological Sciences [Frenchay] - WITHDRAWN MSci 2024-25