UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title	Medical and Molecular Genetics
Module Code	CLS5011-B
Academic Year	2024/5
Credits	20
School	School of Pharmacy and Medical Sciences
FHEQ Level	FHEQ Level 5

Contact Hours	
Type	Hours
Lectures	27
Seminars	19
Directed Study	150
Laboratories	4

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims

The world of genetics awaits you; in this module you will apply the principles of medical and molecular genetics to investigate genetic disorders. The module aims to facilitate the development and application of knowledge of these principles and associated techniques in relation to a range of underlying genetic conditions.

Outline Syllabus

Chromosomes and chromosomal abnormalities; Cytogenetic diagnostic techniques; Autosomal dominant and recessive diseases; Sex-linked diseases; Multifactorial inheritance; Pedigree analysis; Gene expression and gene Regulation; Current techniques for Gene expression analyses: DNA sequencing, Real-time PCR, Reporter Assays and Western blot analyses; Human Genome Project; Clinical bioinformatics; Mutagenesis; RNA decay and selenocysteine incorporation; Investigation and resolution of genetic disorders; Ethical, social and psychological issues associated with gene testing and gene therapy; Genetic counselling.

Learning Outcomes	
Outcome Number	Description
01	Compare and evaluate the clinical manifestation of a range of genetic disorders and explain their underlying mechanisms.
02	Interpret and evaluate information gained from routine techniques used in medical and molecular genetics.
03	Use analytical, problem-solving, and written communication skills.

Learning, Teaching and Assessment Strategy

The knowledge and understanding required for this module will be delivered in research-focused, research-informed and research-led lectures, laboratory practical, tutorials and workshops and with resources available through the Canvas.

Directed study time will enable students to develop and enhance their knowledge and analytical skills by undertaking reading of key texts and supporting resources to support preparation for tutorials/workshops and assessments. Application of the information gained from routine techniques used in medical and molecular genetics will be assessed in the final exam by presenting experimental data for students to interpret and evaluate.

Formative assessment will be used throughout the module. The final examination will include all material covered in the module; this includes the lectures, workshops, tutorials, practical, and self-directed learning material.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Computerised examination	Examination - Closed Book featuring MCQ and essay-based question assessment. (120 minutes)	100%
Formative	Classroom test	Formative, online essay-based examination with multiple-choice questions	N/A

Reading List

To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:
This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.
