

## Module Specification

Module Title	Molecular Genetics	Module Code	BIO163			
Credit Value	15	Level	4	Mode of Delivery	On Campus	Semester A

Pre-requisite modules	Co-requisite modules	Overlapping modules

### 1) Content Description

Provide a description of the module, as it will appear in the Module Directory and on the Student Information

System (approx. 70-80 words).

This module consists of an introduction to genetics, a description of the process by which genetic information is converted into the molecules that make up living things, and a review of the essential properties of those molecules. Genetics topics covered include DNA structure, classical and molecular genetics and genomics. We then examine how information flows from DNA to RNA and then to protein to give the recognisable phenotypic features of living things.

### 2) Module Aims

Specify the aims of the module, i.e. the broad educational purposes for offering this module.

The aim of this module is to ensure that all first year students have a clear understanding of the essentials of genetics; a central subject for the whole of the life sciences.

### 3) Learning Outcomes

Identify the learning outcomes for this module, i.e. knowledge, skills and attributes to be developed through completion of this module. Outcomes should be referenced to the relevant [QAA benchmark statements](#) and the [Framework for Higher Education Qualifications in England, Wales and Northern Ireland \(2008\)](#). The [SEEC Credit Level Descriptors for Further and Higher Education 2003](#) and [Queen Mary Statement of Graduate Attributes](#) should also be used as a guiding framework for curriculum design.

Academic Content:	
A 1	Understand the structure of DNA at the molecular level and know how DNA sequence encodes information.
A 2	Understand the processes of transcription and translation.
A 3	Understand how DNA sequence ultimately leads to observable phenotypes
A 4	Know and apply the principles of classical genetics

Disciplinary skills - able to:	
B1	Carry out analyses of data from classical genetics experiments
B2	Analyse and understand basic sequence data

Attributes:	
C1	Engage critically with knowledge - acquire and apply knowledge in a rigorous way
C2	Engage critically with knowledge - connect information and ideas within their field of study
C3	Research capacity - produce analyses which are grounded in evidence
C4	Learn continuously in a changing world - use quantitative data confidently and competently
C5	Research capacity - work individually and in collaboration with others

#### 4) Reading List

Provide an indicative reading list for the module. This should include key texts and/or journals but should not be an exhaustive list of materials.

Genetics: analysis and principles - Brooker, Robert J., 2017
Genetics: from genes to genomes - Hartwell, Leland, 2017

#### Teaching and Learning Profile

Provide details of the method of delivery (lectures, seminars, fieldwork, practical classes, etc.) used to enable the achievement of learning outcomes and an indicative number of hours for each activity to give an overall picture of the workload a student taking the module would be expected to undertake. This information will form the Key Information Set for each undergraduate programme and will be used to populate the KIS widget found on the QMUL programme information pages. More information can be found [online](#) about KIS. You may also wish to refer to the [QAA guidance on contact hours](#) when completing this section.

Activity Type	KIS Category	Time Spent (in hours)
Workshops	Scheduled	6
Lecture	Scheduled	22
Total		28

Specify the total module notional study hours. This should be a total of the hours given for each activity. The notional study hours for each academic credit point is 10. A 15 credit point module therefore represents 150 notional study hours.


Activity Type	Total Time Spent (in hours)	Percentage of Time Spent
Scheduled learning and teaching	28	19
Placement		
Independent Study	122	81
Total	150	100

Use the information provided in the box above to specify the total time spent and the percentage time spent in each category of teaching and learning activity.

### 5) Assessment Profile

Provide details of the assessment methods used to assess the achievement of learning outcomes.

Description of Assessment	Assessment Type	KIS Category	Duration / Length	Percentage Weighting	Final element of assessment?	Qualifying Mark
Coursework	Report	Coursework		25	No	
Examination	Written Exam	Written	1.5 hours	75	Yes	

**Qualifying mark:** A specified minimum mark that must be obtained in one or more elements of assessment in order to pass a module. **This is in addition to, and distinct from, the requirement to achieve a pass in the module mark to pass the module.**

### Reassessment

Provide details of the reassessment methods used, specifying whether reassessment is either standard reassessment or synoptic reassessment.

Standard Reassessment       Synoptic Reassessment

Synoptic reassessment details (if you have indicated synoptic reassessment above, please give details)		
Brief Description of Assessment	Assessment Type	Duration / Length of Examination / Coursework
Resit Examination	Written Exam	1.5 hours