

## MODULE DESCRIPTOR

### Module Title

Biomedical Genetics

Reference	AS2099	Version	4
Created	August 2017	SCQF Level	SCQF 8
Approved	May 2006	SCQF Points	15
Amended	August 2017	ECTS Points	7.5

### Aims of Module

To provide students with the ability to discuss the significance and fundamental aspects of genetics.

### Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Explain the principles of heredity and apply them to problem solving.
- 2 Explain the processes of gene expression and discuss the factors involved in gene regulation.
- 3 Use safely and effectively, a range of molecular biology techniques and experimental procedures.
- 4 Write detailed formal reports demonstrating a full comprehension of experimental objectives.

### Indicative Module Content

Mendelian and complex genetic inheritance patterns, gene mutation. Molecular Genetics: Replication of DNA and role of DNA polymerase in template directed synthesis: transcription and RNA polymerase, promoter recognition, genetic code, structure and function of ribosomes in translation, role of tRNA in protein synthesis. Gene regulation. The laboratory programme will consist of core molecular biology experiments which may include restriction digestion, PCR and DNA database searches.

### Module Delivery

This module consists of lectures, tutorials, computer based exercises and laboratory work.

### Indicative Student Workload

	Full Time	Part Time
Contact Hours	40	N/A
Non-Contact Hours	110	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

**ASSESSMENT PLAN**

If a major/minor model is used and box is ticked, % weightings below are indicative only.

**Component 1**

Type: Examination Weighting: 50% Outcomes Assessed: 1, 2  
 Description: Closed book examination

**Component 2**

Type: Coursework Weighting: 50% Outcomes Assessed: 3, 4  
 Description: Laboratory conduct and practical reports on experimental work is assessed.

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

This module is assessed using the two components of assessment as detailed in the Assessment Plan. To pass this module, candidates must achieve a Module Grade D or better.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	Final aggregate mark of 70% or greater and a minimum of 35% in C1 and C2
<b>B</b>	Final aggregate mark of between 60-69% and a minimum of 35% in C1 and C2
<b>C</b>	Final aggregate mark of between 50-59% and a minimum of 35% in C1 and C2
<b>D</b>	Final aggregate mark of between 40-49% and a minimum of 35% in C1 and C2
<b>E</b>	MARGINAL FAIL. Final Aggregate mark of between 35-39% and a minimum of 35% in C1 and C2
<b>F</b>	FAIL. A mark of less than 35% in either component
<b>NS</b>	Non-submission of work by published deadline or non-attendance for examination

**Module Requirements**

Prerequisites for Module	Successful completion of Stage 1 of the course or equivalent.
Corequisites for module	None.
Precluded Modules	None.

**INDICATIVE BIBLIOGRAPHY**

- 1 GRIFFITHS, A.J.F., WESSLER, S.R., CARROLL, S.B., and DOEBLEY, J. 2015. *An Introduction to Genetic Analysis*. 11th ed. W H Freeman.
- 2 SNUSTAD, D.P, and SIMMONS, M.J., 2012. *Genetics. International student version*. 6th ed. John Wiley & Sons.
- 3 HARTL, D.L., 2014. *Essential Genetics - A Genomics Perspective*. 6th ed. Jones and Bartlett.
- 4 WEYERS, J., REED, R., JONES, A., and HOLMES, D., 2012. *Practical Skills in Biomolecular Sciences*. 4th ed. Pearson Education.