

Module Title Biomedical Genetics	Reference AS2099 SCQF Level SCQF 8 SCQF Points 15 ECTS Points 7.5 Created April 2005 Approved May 2006 Amended May 2011 Version No. 3
Keywords Genetic Inheritance, DNA replication, transcription, translation, gene regulation.	

This Version is No Longer Current

The latest version of this module is available [here](#)

Prerequisites for Module

Successful completion of Stage 1 of the course or equivalent.

The laboratory programme will consist of core molecular biology experiments which may include restriction digestion, PCR and DNA database searches.

Corequisite Modules

None.

Indicative Student Workload

Precluded Modules

None.

<i>Contact Hours</i>	Full Time
Computer based exercise	4
Laboratory Work	16
Lectures and Tutorials	20

Aims of Module

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

<i>Directed Study</i>	
Directed Study	40
<i>Private Study</i>	
Private Study	70

Learning Outcomes for Module

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

Mode of Delivery

This module consists of lectures, tutorials, computer based exercises

- 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.

and laboratory work.

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,2
Component 2	3,4

Component 2 is assessed through laboratory conduct and written reports.

Component 1 is assessed by a closed book examination.

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 Practical Skills in Biomolecular Sciences*. 4th ed. Pearson Education.