

Module Title:	Principles of Genetics
Academic year:	2009 2010
Credit Value:	5.0
Pre- requisites:	None
Assessment:	Continuous Assessment: 30%; Final examination: 70%
Aims	This module has been designed to give the student an understanding of the principles of genetics and of inheritance patterns. The module will cover the structure and organisation of the DNA molecule including a history of its discovery, and how the genetic code is arranged on chromosomes. The processes of DNA replication, transcription and translation to proteins are described in addition to different patterns of inheritance. Genetic disorders and their inheritance will be taught using pedigree charts representing different inheritance patterns. All aspects of the module will be delivered with a strong emphasis on case studies to contextualize the information using forensic and medical examples where appropriate. Theoretical aspects of this module are underpinned by laboratory experiments delivered in the 'Laboratory skills in DNA and forensics' module in this semester.
Module Content	Structure and organisation of the DNA molecule DNA replication and gene expression Patterns of inheritance Genetic disorders

Intended Learning Outcomes: (September 2007)	Upon completion of this module the student will be able to: Draw the structure of the DNA molecule, and describe the features and organization of the genetic code in humans. Describe the processes of DNA replication, transcription and translation Perform basic genetic crosses and describe examples of non-Mendelian inheritance patterns including how linked genes affect inheritance patterns Draw pedigree charts based on phenotypic expression of chromosomal disorders and recognize different inheritance patterns from these pedigree charts
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