

## MODULE DESCRIPTOR

### Module Title

Clinical Biochemistry			
Reference	AS3098	Version	4
Created	August 2017	SCQF Level	SCQF 9
Approved	September 2004	SCQF Points	15
Amended	August 2017	ECTS Points	7.5

### Aims of Module

To provide students with the ability to apply the principles of clinical biochemistry to the diagnosis, treatment and monitoring of disease.

### Learning Outcomes for Module

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

- 1 Discuss the factors which can lead to the development of cardiovascular gastrointestinal, renal, endocrine and liver disorders and explain how these can be diagnosed and treated.
- 2 Define how pregnancy can be confirmed and how maternal and foetal health can be monitored.
- 3 Evaluate the principles of biochemical investigations used in the diagnosis, treatment and management of inborn errors of metabolism and/or hereditary malignant disease.
- 4 Discuss the principles and uses of therapeutic drug monitoring and how substances of abuse can be investigated.
- 5 Discuss the range and applications of near-patient tests and non-invasive techniques.

### Indicative Module Content

Inborn errors of metabolism and hereditary disease: genetic and biochemical basis of inherited disease, clinical consequences of common inherited diseases, management of inherited disease, mass screening programmes and laboratory investigations. Therapeutic Drug Monitoring (TDM) and toxicology: pharmacokinetic principles as applied to TDM, therapeutic benefits and adverse side effects, drugs of abuse screening programmes, pre-employment and industrial health screening, legal implications, laboratory investigations in emergency toxicology and forensic science. Clinical Endocrinology: diagnosis of selected endocrine disorders, thyroid function tests. Clinical chemistry of the kidney and related disorders: role of kidney in homeostasis of nitrogen, renal function tests, creatinine, gout and aminoacidurias. Cardiovascular disease: platelet functions, thromboses and atherosclerosis. Near-patient testing and selected non-invasive techniques. Liver disease: liver function tests, jaundice. Gastroenterology: gastric and duodenal function tests, malabsorption syndromes. Clinical chemistry of pregnancy and lactation: pregnancy tests, prenatal diagnosis of birth defects, hormonal monitoring of foetal and maternal health, postnatal screening tests.

**Module Delivery**

This is a lecture and case study oriented course supplemented with directed reading, seminars from visiting speakers and tutorial sessions.

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	30	N/A
Non-Contact Hours	120	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:	100%	Outcomes Assessed:	1, 2, 3, 4
Description:	A closed book examination consisting of two sections: Section A will be one of three pre-seen case studies; Section B will consist of essay questions.				

**Component 2**

Type:	Coursework	Weighting:	0%	Outcomes Assessed:	5
Description:	The coursework will consist of an essay in which the student will show understanding of near-patient testing and non-invasive techniques giving selected examples. It will be marked as either a pass or fail.				

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

This module is assessed using the 2 components of assessment as detailed in the Assessment Plan. To pass this module, candidates must achieve a grade D or better.

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

**Module Requirements**

Prerequisites for Module	In addition to SCQF 9 entry requirements, students should be familiar with human biochemistry and human physiology.
Corequisites for module	None.
Precluded Modules	None.

**INDICATIVE BIBLIOGRAPHY**

- 1 AHMED, N. *Clinical Biochemistry*. Current Edition. Oxford University Press.
- 2 BURTIS, C.A. AND ASHWOOD, E.R. *Tietz: Fundamentals of Clinical Chemistry*. Current Edition. Saunders.
- 3 LUXTON, R. *Clinical Biochemistry*. Current Edition. Scion Publishing Ltd.
- 4 PRICE, C.P., St JOHN, A. AND HICKS, J.M. *Point of Care Testing*. Current Edition. American Association of Clinical Chemistry.
- 5 MOORE, G., KNIGHT, G. and BLANN, A. *Haematology*. Current Edition. Oxford University Press.
- 6 KNIGHT, R. *Transfusion and Transplantation Science. Current Edition. Oxford University Press.*
- 7 OVERFIELD, J., DAWSON, M. AND HAMER, D. *Transfusion Science*. Current Edition. Scion Publishing Ltd.
- 8 HALL, A., SCOTT, C. AND BUCKLAN, M. *Clinical Immunology*. Current Edition. Oxford University Press.