

Module Title Clinical Biochemistry	Reference AS3098 SCQF Level SCQF 9 SCQF Points 15 ECTS Points 7.5 Created May 2002 Approved September 2004 Amended May 2011 Version No. 2
Keywords Inherited metabolic disease, endocrine disorders, endocrine related metabolic disorders, nephrology, gastroenterology, hepatology, diagnosis, health monitoring.	

This Version is No Longer Current

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

Prerequisites for Module

In addition to SCQF 9 entry requirements, students should be familiar with human biochemistry and human physiology.

Corequisite Modules

None.

Precluded Modules

None.

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

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.

Indicative Student Workload

<i>Contact Hours</i>	Full Time
Lectures	30
<i>Directed Study</i>	
Directed Study	50
<i>Private Study</i>	
Private Study	70

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

Mode of Delivery

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

Assessment Plan

	Learning Outcomes Assessed
Component 1	5
Component 2	1,2,3,4

Component 2: The examination will be closed book and will consist of two sections: Section A will be one of three pre-seen case studies, Section B will consist of essay questions.

Component 1: 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.

Indicative Bibliography

1. AHMED, N. *Clinical Biochemistry*. Current Edition. Oxford University Press.

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.

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.