



MODULE SPECIFICATION

Code: USSJKT-20-1 **Title:** Introduction to the Biology of Disease **Version:** 2

Level: 1 **UWE credit rating:** 20 **ECTS credit rating:** 10

Module type: Standard

Owning Faculty: Health and Life Sciences

Field: Applied Sciences

Faculty Committee approval: Quality and Standards Committee

Date: August 2011

Approved for Delivery by: N/A

Valid from: September 2011

Discontinued from:

Pre-requisites:

None

Co-requisites:

None

Entry requirements:

N/A

Excluded combinations:

N/A

Learning outcomes:

Students will be able to:

- gain an appreciation of the science underpinning the range of disciplines within the Biomedical Health Care Sciences;
- describe some of the major causes of human disease and explain their biological basis;
- explain the basis of disease response mechanisms such as inflammation, necrosis and cell death;
- discuss approaches to the investigation and diagnosis of selected disease processes;
- demonstrate good lab practice, basic practical and analytical skills in a simulated clinical diagnostic work and appreciate the interface with patients.

Syllabus outline:

General concepts and introduction to human disease
Characteristics of disease
Classification of disease
Health and disease

The major areas described in Biomedical Health Care Science include:

Haematology;

Overview of haemopoiesis, normal blood parameters and haemostasis;

Clinical Biochemistry;

Disorders of the liver and heart (atherosclerosis) will be described, also diabetes;

Cytogenetics and disease;

Clinical cytogenetics, karyotype analysis and phenotypic expression of genetic abnormality;

Cellular injury and death;

The cell as the basis of life and disease;

Cell death – necrosis and apoptosis;

Acute and chronic inflammation – fluid, cellular and systemic aspects of inflammation;

Patterns of inflammation;

Toxicity and infection;
Disorders of Growth, Cellular Proliferation and Differentiation;
Response of the Body to Immunologic Challenge;
Cells and tissues of the immune system.

Teaching and learning methods:

This module will be delivered as a series of keynote lectures, designed to highlight the important principles and concepts of each topic and to provide a framework for personal study. Self-directed study will be used to encourage students to utilize their growing knowledge and to develop their understanding of pathology and the biology of disease. Practical classes will be designed to develop good laboratory practice, an appreciation of safety issues and the requirement for care, diligence and attention to detail in clinical diagnostic work in addition to academic objectives. Practical classes will include simulated case studies and will allow the students to develop their analytical, interpretative and data handling skills and will be assessed via a poster presentation

Reading Strategy:

All students will be encouraged to make full use of the print and electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject relevant resources and services, and to the library catalogue. Many resources can be accessed remotely. Students will be presented with opportunities within the curriculum to develop their information retrieval and evaluation skills in order to identify such resources effectively.

Any **essential reading** will be indicated clearly, along with the method for accessing it, e.g. students may be expected to purchase a set text, be given or sold a print study pack or be referred to texts that are available electronically, etc. This guidance will be available either in the module handbook, via the module information on Blackboard or through any other vehicle deemed appropriate by the module/programme leaders.

If **further reading** is expected, this will be indicated clearly. If specific texts are listed, a clear indication will be given regarding how to access them and, if appropriate, students will be given guidance on how to identify relevant sources for themselves, e.g. through use of bibliographical databases.

Indicative Reading List:

Latest versions of the following:

An introduction to human disease, pathology and pathophysiology correlations Crowley, Publisher: Jones and Bartlett

Other useful texts include:

Haematology:

- A Beginner's Guide to Blood Cells. Bain. Publisher: Blackwell Publishers
- Lecture Notes on Haematology. Hugh-Jones, Wickramasinghe and Hatton. Publisher: Blackwell Publishers
- Case-Based Haematology. McCann, Foa, Smith and Conneally. Publisher: Blackwell Publishers

Clinical Biochemistry:

- Clinical Chemistry, Luxton. Publisher: Butterworth-Heinemann
- Clinical Chemistry 5th edition, Marshall, Bangert, Publisher: C.V. Mosby
- Clinical Biochemistry 3rd edition, An illustrated colour text, Gaw, Murphy, Cowan, Denis O'Reilly, Stewart, Shepherd, Publisher: Churchill Livingstone

Immunology:

- How the Immune system works. Sompayrac, Publisher: Blackwell Publishers

- Immunology (5th edition). Goldsby, Kindt, Kuby, Osborne, Publisher: WH Freeman and Co.

Pathology:

- Pathology. Steven and Lowe. Publisher: C.V. Mosby
- Basic Pathology: An introduction to the Mechanisms of Disease Lakhani, Dilly, Finlayson, Dogan, Publisher: Arnold
- The Biology of Disease, Phillips, Murray, Kirk. Publisher: Blackwell Publishers

Cytogenetics and disease:

- Emery's Elements of Medical Genetics, Turnpenny, and Ellard, Publisher: Churchill Livingstone, DWH
- Essential Medical Genetics (Essentials S.). Connor and Ferguson-Smith, Publisher: Blackwell Science (UK)

Useful websites

<http://histology.leeds.ac.uk>

phagocytosis demo, <http://www.sp.uconn.edu/~terry/Common/phago053.html>

blood cell identification, http://www.depts.ttu.edu/liru_afs/staff/jdailey/jwdblood.htm

blood transfusion game, - <http://nobelprize.org/medicine/educational/landsteiner/>

pipetting: <http://www.umd.umich.edu/casl/natsci/slc/slconline/MICRPIP/>

Assessment:

Weighting between components A and B (standard modules only) A: 40% B: 60%

ATTEMPT 1

First Assessment Opportunity

Component A (<i>controlled</i>)	Element weighting
EX1 Examination (assessment period 1) (2 hours) FINAL ASSESSMENT	1

Component B

Description of each element	Element weighting
CW1 Poster presentation	1

Second Assessment Opportunity (further attendance at taught classes is not required)

Component A

Description of each element	Element weighting
EX2 Examination (assessment period 3) (2 hours) FINAL ASSESSMENT	1

Component B

Description of each element

Element weighting

CW2 Poster Presentation

1

SECOND (OR SUBSEQUENT) ATTEMPT Attendance at taught classes is required.

Specification confirmed by**Date**
(Associate Dean/Programme Director)