

PATHOLOGY AND MEDICINE - 2024/5

Module code: BMS2046

Module Overview

This module addresses the essential need for students to understand the concepts of the pathogenesis of major human diseases and provides students with important background knowledge to understand clinical (or analytical) medicine. The contents of this module bridge basic science with the pathology of human disease and medical science including the understanding of the principles of major organ diseases in the human body.

Module provider

School of Biosciences

Module Leader

WU Changhao (Biosciences)

Number of Credits: 15

ECTS Credits: 7.5

Framework: FHEQ Level 5

Module cap (Maximum number of students): N/A

Overall student workload

Workshop Hours: 1

Independent Learning Hours: 78

Lecture Hours: 30

Tutorial Hours: 8

Laboratory Hours: 3

Guided Learning: 30

Captured Content: 30

Module Availability

Semester 2

Prerequisites / Co-requisites

BMS1032 Introduction to Principles of Physiology and Practice Skills

Module content

Introduction to the module, module outline and marking scheme.

General Pathology

Nomenclature and classification of diseases

Aetiology and pathogenesis of disease

Cellular injury

Cell apoptosis and cell death

Thrombosis

Embolism and infarction

Acute inflammation and outcomes

Chronic Inflammation and outcomes

Cellular adaptation and tissue regeneration

Disorder of growth, differentiation and tumour

Mock MCQ TEST with assessment and feedback

Practical Pathology

Clinical cytology (pre-practical lecture)

Cytology practical (3h/per group, total 6h for 2 groups)

Systems Pathology

Cardiovascular system and diseases

RBC, WBC and disorder

Haemostasis and disorders

Case study and discussion

Nervous system and diseases

Gastro-intestinal tract and diseases

Liver and diseases

Respiratory system and diseases

Mock MCQ test, self assessment and feedback

Kidney diseases

In-class MCQ Test

Endocrine disorder

Urinary and genital tract disorders

In-class test feedback and revision

Assessment pattern

Assessment type	Unit of assessment	Weighting
School-timetabled exam/test	Invigilated In Class Test (40 MCQs, 80% mark, 5 SAQs, 20% mark) (1 Hour)	30
Examination	Invigilated Exam (2 Hours)	70

Alternative Assessment

N/A

Assessment Strategy

The assessment strategy is designed to provide students with the opportunity to demonstrate how well they have performed in this module and also to help them to improve during the term. Various formative assessments will help the students to improve. The summative assessments will determine the students' final performance and include a low weight in-class assessment and a final examination.

Summative assessment and feedback

In class mid-term test: This includes 40 MCQs and 5 SAQs in 1 hour, covering the contents of General Pathology topics with a minor component on the practical knowledge. In the form of an invigilated test

Final examination: This includes 100 MCQs to be completed in 2 h, covering General Pathology and Systems Pathology topics. In the form of an invigilated exam

Formative assessment for this module consists of:

Two in class mock tests with feedback (4h). These tests aim to help students to summarize learning up to that point (after 10-15 lectures) and their progress. The feedback will be provided immediately and students will know how well they have performed in the

module.

Practical report - guided peer-assessment (1h)

Quiz and questions: at the end of some lectures.

Pre-practical questionnaires: These will be provided in the practical booklet given to the students a week before the practical. Students can use SurreyLearn to help with the answers.

Feedback:

Each mock test will be given feedback immediately in the class.

The practical report will be peer-marked with the feedback in the practical session.

At the end of the module, there will be two hours of feedback and tutorial session.

Module aims

- To introduce students to the language of pathology and clinical medicine
- To provide students with the principles of general pathology and the application of these to the systematic pathology
- To give students a basic understanding of the pathogenesis, characteristics and outcome of examples of major organ diseases
- To provide student the opportunity to learn basic hand-on skill and report writing useful in the clinic analytic laboratory as a basis for biomedical sciences, and other health related professions

Learning outcomes

		Attributes Developed
001	Define the terms used in the description and the characteristics of disease	KPT
002	Explain the difference between aetiology and risk factors	KCPT
003	Describe the pathogenesis and characteristics of the major categories of disease	KCPT
004	Show knowledge of specific organ disorders and the way in which they affect our body systems	KCPT
005	Understand the language and show the ability to perform laboratory tasks, analyse and describe data of pathology and clinical chemistry for clinical diagnosis	KCPT
006	Show basic knowledge of key areas of clinical medicine	KCPT

Attributes Developed

C - Cognitive/analytical

K - Subject knowledge

T - Transferable skills

P - Professional/Practical skills

Methods of Teaching / Learning

The learning and teaching strategy is designed to:

Module introduction:

Lectures : Apart from delivery of the essential information orally, slides will have colour illustrations of diseases plus audio video presentation to help students to remember and to be interested in the contents. During each lecture, students will be encouraged to interact with the lecturers i.e. ask questions and the lecturers will provide adequate answers to these questions. Students will also be given practice questions to answer to aid preparation for the tests. Face to face lectures so that there are of face-to-face (live) teaching including tutorials, case study, pre-practical lecture, lab sessions, each teaching week.

In class case study, group discussion, mock tests and feedback tutorial sessions to provide intellectual stimulation to the students and to help students in understanding the lecture content and provide feedback.

In-class test:

Pre-practical lecture:

Guided study : 1) Virtual learning : Materials will be provided in SurreyLearn module website including module information, lecture notes, illustrations, and study guidance. 2) Hard copies and booklet : Students will be given a printed booklet including the principle of cytology, practical guidance, detailed protocols and questionnaires. 3) Library provides recommended textbooks.

Practical Laboratory work consists two parts:

1. Observation and description of pre-stained cervical samples prepared using liquid-based cytology, by light microscopy.
2. The preparation and staining of buccal cavity smears performed by students themselves and followed by observation and description of their own cells using light microscopy.

Independent studies:

Indicated Lecture Hours (which may also include seminars, tutorials, workshops and other contact time) are approximate and may include in-class tests where one or more of these are an assessment on the module. In-class tests are scheduled/organised separately to taught content and will be published on to student personal timetables, where they apply to taken modules, as soon as they are finalised by central administration. This will usually be after the initial publication of the teaching timetable for the relevant semester.

Reading list

<https://readinglists.surrey.ac.uk>

Upon accessing the reading list, please search for the module using the module code: **BMS2046**

Other information

Throughout the teaching and learning process and the assessments, we will integrate the five pillars of the modern high education and implement them.

Resourcefulness & resilience: Highly interactive approaches are adopted in teaching and learning process of Pathology and Medicine. The students are motivated to actively participate in class discussions and case studies, express their own thoughts and evaluate data and information. The module delivery keeps the students with an open mind for the currently medically important questions but with no answers yet and prepares the students to seek new knowledge, investigate and solve these current problems in the future.

Global & cultural capabilities: The study of a disease includes population characteristics, geographical features of the disease, WHO disease prevalence and global distributions; the graduates to work in different parts of the world will have the knowledge to deal with the local prevalent diseases more effectively.

Sustainability: Pathology and Medicine includes the discussion on ageing populations, importance of the environment and ecosystem on human's health related to the sustainability and cross-species transmissions of disease.

Digital capabilities: The students engage with video illustrations via internet link on the physiological and pathophysiological processes of a body system, various online tools, such as Teams, Zoom platform, online forums, for far reaching teaching discussions, feedback, formative feedback, case discussions and summative assessments.

Employability: Patient case study discussion in the class, in-lecture discussion of clinically important diseases which build up the students' ability to work in health service and clinical laboratories, medical research, and drug companies in the future. Histopathology slides from cancer patient samples enhance the students' skills for hospital pathology work as a clinical scientist. The students find that completion of this module helps their professional training year in health sectors and pharmaceutical companies.

Programmes this module appears in

Programme	Semester	Classification	Qualifying conditions
Biochemistry BSc (Hons)	2	Compulsory	A weighted aggregate mark of 40% is required to pass the module
Biochemistry MSci (Hons)	2	Compulsory	A weighted aggregate mark of 40% is required to pass the module
Biological Sciences (Cellular and Molecular Sciences) BSc (Hons)	2	Optional	A weighted aggregate mark of 40% is required to pass the module
Biological Sciences (Infection and Immunity) BSc (Hons)	2	Optional	A weighted aggregate mark of 40% is required to pass the module
Biological Sciences BSc (Hons)	2	Optional	A weighted aggregate mark of 40% is required to pass the module
Microbiology BSc (Hons)	2	Compulsory	A weighted aggregate mark of 40% is required to pass the module
Veterinary Biosciences BSc (Hons)	2	Optional	A weighted aggregate mark of 40% is required to pass the module

Please note that the information detailed within this record is accurate at the time of publishing and may be subject to change. This record contains information for the most up to date version of the programme / module for the 2024/5 academic year.

