



Module Specification

Haematology and Transfusion Science

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Part 1: Information

Module title: Haematology and Transfusion Science

Module code: USSKBK-30-3

Level: Level 6

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Health & Applied Sciences

Department: HAS Dept of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Studies in the Biology of Disease 2023-24

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: See Learning Outcomes.

Outline syllabus: The anaemias:

Classification systems. Megaloblastic anaemias. Iron deficiency and related anaemias. Normal erythrocyte structure and function. Red cell survival disorders.

Haemoglobinopathies and the thalassaemia syndromes. Red cell enzymopathies.

Haematological malignancy:

Aetiology and the multi-hit hypothesis. Classification. Principles of investigation and diagnostic criteria. Pathophysiology. Theoretical basis of cytotoxic chemotherapy and stem cell transplantation.

Haemostasis:

Structure and contribution to haemostatic function of blood vessels, platelets, coagulation proteins and fibrinolytic proteins. Functional inter-relationships between the vascular, platelet, coagulation and fibrinolytic systems. Naturally occurring inhibitors of coagulation and fibrinolysis. Haemorrhagic conditions, the hypercoagulable state, and diagnosis and therapy of these.

Blood donation:

Principles of the selection, collection, separation, storage and transportation of donated blood components for transfusion. The bacteriology, virology and parasitology of diseases which can be transmitted by transfusion.

Blood groups:

The major blood polymorphisms, for example, ABO, Rh, and selected other blood group systems. Blood group structure, function and relevance to transfusion.

Compatibility of blood:

In vitro antibody-antigen reactions for the selection of compatible blood. Optimisation of detection techniques for in vitro antibody-antigen reactions.

Immuno-haematology:

Laboratory investigation of serological reactions to aid diagnosis of immunohaemolytic disease and immunological transfusion reactions. Strategies for the prophylaxis of immunohaemolytic disease.

Transfusion therapy:

The appropriate use of blood components. Hypersensitivity responses to transfusion.

Part 3: Teaching and learning methods

Teaching and learning methods: This module is a core specialist module within the BSc Biomedical Science programme and so aims to deliver specialist knowledge through taught lectures, together with inductive tutorials, seminars and practical classes to enable application and problem-solving utilising this knowledge. Student learning will be further supported through the University's E-Learning Environment, Blackboard, with provision of materials and activities to guide independent study.

Students are expected to spend 72 hours on scheduled learning and a further 228 hours on independent learning.

Independent learning will take the following forms with an approximate indication of time required for each:

Essential reading to support acquisition of knowledge and completion of problem-solving tasks, case studies and online material related to lectures and tutorials – 120 hours

Preparation and completion of assignment 1 – 48 hours

Exam revision and preparation – 60 hours

Scheduled learning includes lectures, tutorials and practical classes.

Independent learning includes hours engaged with essential reading, case study preparation, online activities, assignment preparation and completion.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Critically discuss the processes involved in the maintenance of normal blood composition and function

MO2 Outline the nature and significance of investigative haematology and its role in the diagnostic process

MO3 Discuss critically the biological basis of selected haematological disease states

MO4 Demonstrate a detailed knowledge and understanding of the main areas of the module – haematological malignancies, haemostatic disorders, red cell disorders and blood transfusion

MO5 Interpret parameters that characterise selected disease states

MO6 Critically appraise relevant scientific literature

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/usskbk-30-3.html) via the following link <https://uwe.rl.talis.com/modules/usskbk-30-3.html>

Part 4: Assessment

Assessment strategy: The Assessment Strategy has been designed to support and enhance the development of subject-based knowledge and skills, whilst ensuring that the Learning Outcomes are achieved.

Assessment 1 is a case study, enabling students to research and critically analyse current literature, as well as interpreting data. Both formative and summative feedback will be given during, and following completion of the assignment, which can feed forward to help students improve performance within the exam.

Assessment 2 is a two hour examination. The exam will comprise a mixture of

question styles and is an effective method of assessing a student's ability to utilise and apply knowledge gained at this level.

Formative feedback is available throughout the module using Q and A sessions in lectures, group discussions, particularly in tutorials/seminars/practical, together with use of multiple choice questions throughout taught sessions to enable students to gain an indication of their progress anonymously. Briefing and Q and A sessions will be given before coursework deadlines, as well as tutorials covering how to approach exam questions throughout the course, together with specific exam revision and preparation sessions prior to the exam.

Assessment tasks:**Case Study (First Sit)**

Description: Case study (2000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Examination (First Sit)

Description: Two Hour Examination

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Case Study (Resit)

Description: Case study (2000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Examination (Resit)

Description: Two Hour Examination

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Biomedical Science [Sep][SW][Frenchay][5yrs] MSci 2020-21

Biomedical Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2020-21

Biomedical Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2019-20

Biomedical Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Biomedical Science [Sep][FT][Frenchay][4yrs] MSci 2021-22

Applied Biomedical Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Biomedical Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][PT][Frenchay][6yrs] BSc (Hons) 2019-20

Biomedical Science [Sep][PT][Frenchay][8yrs] MSci 2019-20

Biomedical Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2019-20