Module Specification

Haematology and Transfusion Science

Version: 2025-26, v5.0, Approved

Contents

Part 1: Information

Module title: Haematology and Transfusion Science

Module code: USSKBK-30-3

Level: Level 6

For implementation from: 2025-26

UWE credit rating: 30

ECTS credit rating: 15

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Studies in the Biology of Disease 2025-26

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Haematology and transfusion science builds upon previous foundational knowledge and understanding gained in haematology and blood transfusion. Students will study normal haematological function and regulation, followed by the pathophysiology, aetiology, clinical investigation and therapy of various haematological diseases.

Pre-requisites: Students must have passed USSKAT-30-2 Studies in the Biology of Disease before starting this module

Features: Not applicable

Educational aims: This module aims to provide students with in-depth knowledge of both haematology and blood transfusion, aligning with QAA subject benchmarks statements specified by the Institute for Biomedical Science.

Outline syllabus: The module content is split into 4 main areas, taught in sections with integrated case studies/practicals throughout to embed and apply theoretical knowledge. Each content area will initially focus on healthy haematological aspects and morphology, before moving on to the pathophysiology, investigation and treatment of selected disease states. Key areas of the module include haematological malignancies, haemostasis, red cell disorders and blood transfusion.

After learning about normal haematopoiesis and regulation in detail, students will study the pathophysiology and aetiology of various haematological malignancies, including the multi-hit theory and both cellular and molecular alterations. Through integrated case studies, students will learn and apply knowledge of diagnostic investigations, linking these to appropriate treatments, such as chemotherapy, targeted therapies and stem cell transplantation.

Various red cell-based disorders will be explored, including both acquired conditions such as haemolytic anaemias and nutritional anaemias, alongside congenital disorders such as the haemoglobinopathies and enzymopathies.

The haemostatic system in health will be studied, including blood vessels, platelets, coagulation proteins/inhibitors and fibrinolysis, and their interactions, and contribution to effective haemostasis. Integrated case studies/practicals will be used to discuss alterations to these systems in various haemorrhagic/hypercoagulable disease states, including investigation and treatment of these.

The theoretical basis of clinically important blood groups, including structure, genetics, inheritance, function, and relevance to transfusion will be introduced. Principles of blood donation will be discussed, including appropriate preparation,

storage and use of blood components/products, patient blood management, and techniques for compatibility testing. Alongside this, safety aspects such as transfusion-transmitted infections and adverse effects of transfusion will be discussed.

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 interactive tutorials, seminars and practical classes to enable application and problem-solving utilising this knowledge.

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, and how these are altered in malignant and non-malignant haematological disorders.

MO2 Evidence an in-depth and up-to-date understanding of molecular and cellular haematology, including within various malignant, haemostatic and red cell-based haematological disorders.

MO3 Demonstrate an understanding of the role and significance of investigative haematology and its role in the diagnostic process, including interpretation of parameters characterising selected disease states.

MO4 Evidence an in-depth theoretical knowledge of blood transfusion, and how this relates to blood donation and processing, compatibility testing, and appropriate transfusion therapy.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

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

Part 4: Assessment

Assessment strategy: Assessment 1: Case Study (Maximum 2000 words)
A case study enabling students to research and critically analyse current literature, as well as interpret data. Formative feedback will be given in advance of the assignment.

Assessment 2: Examination (2 hours)
Three hour on-campus invigilated examination to align with the Institute of Biomedical Science requirements.

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 classes, together with use of multiple choice questions throughout taught sessions to enable students to gain an indication of their progress anonymously. Tutorials cover how to approach exam questions throughout the course, together with specific exam revision and preparation sessions prior to the exam.

The students are further supported to succeed by being permitted to bring a single A4 box file of information with them in to the assessment for use as a reference point. The content of the box is controlled to prevent students bringing pre-written essays in to copy.

Summative feedback for assessment 1 is formative for assessment 2.

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

Examination (First Sit)
Description: Two Hour Examination
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Case Study (Resit)
Description: Case study (2000 words).
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Examination (Resit)
Description: Two Hour Examination
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Biomedical Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2021-22

Biomedical Science [Frenchay] BSc (Hons) 2023-24

Biomedical Science [Frenchay] MSci 2023-24

Biomedical Science [Sep][PT][Frenchay][6yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][PT][Frenchay][6yrs] BSc (Hons) 2021-22

Biomedical Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2021-22

Biomedical Science [Sep][PT][Frenchay][8yrs] MSci 2020-21

Biomedical Science [Sep][PT][Frenchay][8yrs] MSci 2021-22

Biomedical Science [Frenchay] BSc (Hons) 2022-23

Biomedical Science {Foundation} [Frenchay] BSc (Hons) 2022-23

Biomedical Science [Frenchay] MSci 2022-23

Biomedical Science {Foundation} [Frenchay] MSci 2022-23