

Module Specification

Module Summary Information

1	Module Title	Blood Science
2	Module Credits	20
3	Module Level	5
4	Module Code	BMS5000

5	Module Overview
<p>Rationale:</p> <p>This module will provide you with an introduction to the components of human blood, the functions of the different cell types, and the disorders that affect them. This module will also include the techniques for diagnosis and monitoring of blood disorders, the interpretation of clinical and laboratory data, and the essential features of modern clinical and laboratory haematology.</p> <p>The module will cover aspect of immunology and antibody production, inflammation, haemoglobin disorders, and blood cancers (leukaemias and lymphomas). In addition, you will learn about blood transfusion science and organ transplantation, and the safety measures associated with the storage of blood products.</p> <p>A series of laboratory practical and data interpretation exercises will be scheduled throughout the module to enhance your laboratory, data interpretation and problem solving skills which prepares you for the final module assessment.</p> <p>Alignment with Programme Philosophy and Aims:</p> <p>This module has been designed to provide you with knowledge and understanding of haematology and blood transfusion science and develop your laboratory and investigational skills and attributes that are readily transferable into a range of employment and options for future study. These attributes include communication, critical thinking and problem solving, practical skills, self-management and team working. This module will build upon the Biochemistry knowledge that you have at Level 4 and during the Clinical Biochemistry and Cellular Analysis module. The immunological content within this module will complement the Infectious Diseases module and will feed forward into the Level 6 Molecular Basis of Disease module.</p> <p>Learning will be accomplished through a variety of learning and teaching methods; including classroom teaching, online resources, virtual computer simulations and a range of laboratory practicals to apply your knowledge and gain other key transferable skills. You will work individually and in teams with peers, to develop scholarship through reflective practice, and progression will be monitored with opportunities for supplementary learning provided through tailored online resources, seminar sessions and pre- and post-session activities. You will be required to keep up with global issues and developments related to haematology and blood transfusion science to improve patient care through reading journal articles and following professional social media forums.</p>	

Learning and Teaching Strategy

This module will use a blended approach to facilitate your learning. Lead lectures will provide you with a framework for extensive independent study of the core syllabus which will be underpinned by a range of online resources, textbooks and scientific articles. Lectures will contain a mix of information delivery, interactive elements using Student Response Polling system and peer learning activities. Your knowledge will be applied during a series of laboratory practical sessions, for which you will develop your investigational, data interpretation, problem solving and team working skills.

The module will be supported by an online Moodle site, where a range of pre- and post-session resources and activities will be available to facilitate your learning. Active and informed participation through pre- & post-session work will be an integral component of the module. Such engagement will allow for the development of learning communities to enhance the learning experience of you and your peers.

To achieve the required 20 credits for this module, you will need to dedicate at least 200 hours studying the module material. For this module, the time is broken down in an approximately 25:75 ratio (directed: self-directed). The scheduled learning activities will include lectures, seminars, tutorials, practical sessions and facilitated discussions.

Assessment Strategy:

This module will be summatively assessed via 2 invigilated written examinations of 1 hour each. The first exam will be around the middle of the semester whilst the 2nd will be at the end of the semester. The exam comprises of multiple choice, short answer and longer answer/data interpretation questions which have been designed to assess your knowledge and understanding of the subject area and examine your ability to apply your knowledge to interpret sets of laboratory test data in the light of clinical details of patients with haematological disorder.

6	Indicative Content
	<ol style="list-style-type: none"> 1. Students will explore the relevant concepts of blood science in the context human blood-related diseases. We will look at how blood is produced in the body, its properties in transportation of gasses and immunology for example, and other roles and describe the constituents of blood. We will also look into common diseases associated with abnormalities of red blood cells with focus on genetic disorders of red blood cells. 2. We will then delve into the field of immunology, discussing the different types of white blood cells and what specific physiological roles they play. To follow on, we will then explore diseases related to white blood cells, playing specific attention to white blood cell malignancies. 3. The next theme that will be covered will be around blood clotting. We will talk about the physiological homeostasis of blood clotting and diseases associated with blood clotting disorders. 4. To finish off and continuing the theme of blood disorders, we will discuss blood transfusions. In doing so, we will look at the ABO blood groupings and how blood is tested to ensure that cross-reactivity of blood between the donor and the host is tested before transfusion.

7		Module Learning Outcomes On successful completion of the module, students will be able to:
	1	Describe the basic organization of the blood system, development, structure and function of blood in healthy individuals.
	2	Discuss the pathophysiology and clinical presentation of a range of haematological disorders.
	3	Evaluate the preparation and uses of blood products, and the risks associated with their use.
	4	Critically assess the application of the techniques and procedures used in haematological investigation and transfusion science, and interpret laboratory results in the light of clinical details of patients with common haematological disorders.

8		Module Assessment		
Learning Outcome				
		Coursework	Exam	In-Person
1 – 4			X	

9		Breakdown Learning and Teaching Activities	
Learning Activities		Hours	
Scheduled Learning (SL) includes lectures, practical classes and workshops, peer group learning, Graduate+, as specified in timetable		40 hours	
Directed Learning (DL) includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE		120 hours	
Private Study (PS) includes preparation for exams		40 hours	
Total Study Hours:		200 hours	