UNIVERSITY of BRADFORD

Module Descriptor

Immunology, Haematology and Transfusion Science

Module Code:	BIS5012-B
Academic Year:	2018-19
Credit Rating:	20
School:	School of Chemistry and Biosciences
Subject Area:	Biomedical Science
FHEQ Level:	FHEQ Level 5
Module Leader:	Professor Kevin McElwee

Additional Tutors:
Mrs Gillian Jaggar, Dr Jennifer Waby, Dr Steven Picksley, Dr Mojgan Najafzadeh

Pre-requisites:	Cell and Tissue Biology 2017-18, Introductory Biochemistry
Co-requisites:	

Contact Hours

Type	Hours
Lectures	30
Tutorials	8
Laboratory	9
Directed Study	153

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Academic Year (Sept - May)

Module Aims

To develop an appreciation of the study and investigation of the different elements that constitute blood in normal and diseased states (haematology) and the identification of blood group antigens and antibodies which ensures a safe supply of blood and blood components (transfusion science). To develop an appreciation of the fundamentals of the immune system and immune responses. To introduce some basic immunological techniques commonly used

throughout the Biomedical Sciences. To provide an opportunity to further develop discipline specific and personal transferable skills.

Outline Syllabus

Immune system and immune responses: a general overview. Cells and tissues of immune system including lymphocytes, phagocytes and polymorphs; lymphoid organs and bone marrow. Antigens/immunogens and haptens. B cells and antibody responses. Structure and function of antibodies. Detection of antigen-antibody reactions. Complement: classical pathway/alternative pathway. T-cells and cell mediated immune responses. The role of the major histocompatibility complex (MHC). The structure and function of class I and class II MHC proteins. Immunopathology

Haematology - the structure, function and production of blood cells, platelet structure and function. Haemostasis, fibrinolysis, thrombosis. The nature and diagnosis of anaemias. Haemoglobinopathies and thalassaemias. Haematological malignancy. Transfusion Science. The genetics, inheritance, structure and role of red cell antigens. The preparation, storage and use of blood components. The selection of appropriate blood components for transfusion and possible adverse effects. Immune mediated destruction of blood cells. The health and safety aspects of handling blood.

Module Learning Outcomes

On successful completion of this module, students will be able to...

1 Describe the structure and function of the cells, tissues and molecular effectors of the immune system and explain the nature of immune responses (HCPC standards 14, 13).

2 Describe the structure, function and production of blood cells and their role in health and disease (HCPC standards 14, 13).

3 Explain the genetics of blood groups and the importance of blood group antigens and antibodies in transfusion practice (HCPC standards 14, 13).

4 Present scientific information appropriately and demonstrate understanding of the data (HCPC standards 1, 3, 8, 14, 10, 15).

5 Employ written communication skills (HCPC standard 8).

6 Recognise the need for effective self-management of workload and resources (HCPC standard 1).

7 Work successfully individually and in a small team to interpret data relating to health and disease (HCPC standard 14).

8 Reflect on and analyse their own strengths, limitations and performance.

Learning, Teaching and Assessment Strategy

Information outlining the knowledge and understanding required for this module is delivered in lectures. Additional formative material will be delivered via the virtual learning environment (VLE) to promote autonomous learning. This information is reinforced by practical and workshop sessions. In the workshops you will work in groups to research

information, interpret data, solve problems and develop your understanding which will then be assessed. The practical classes will provide the opportunity to develop experimental antibody techniques and data interpretation and analysis and understanding of blood disorders. During directed study hours, students are expected to undertake reading to consolidate and expand on the content of formal taught sessions; research and prepare for assessments; revise material from formal taught sessions; and undertake specific elements of reading as directed.
Private study will be facilitated and supported via the use of the VLE, which will provide coursework advice and feedback, and revision support.
Reassessment of failed elements will be as per the initial method of assessment.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - closed book	Exam comprising MCQ & short answer questions (LOs 1-5, 8)	1.5 hours	50%	No
Summative	Examination - closed book	Data analysis MCQ & short answer questions (LO 1-8)	1.5 hours	50%	Yes
Formative	Classroom test	TBL revision of immunology in small groups	1 hour	%	No
Formative	Classroom test	Open book Data interpretation individually or in pairs	2 hours	%	No
Formative	Classroom test	Open book case study individually or in pairs	2 hours	%	No

Legacy Code (if applicable)

BM-5120L

Reading List

To view Reading List, please go to **rebus:list**.