University of the West of England
BRISTOL

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Haematology and Transfusion					
Module Code	USSJNC-30-M		Level	M	Version	2
Owning Faculty	Health and Life Sciences		Field	Applied Sciences		
Contributes towards	MSc Biomedical Science Compulsory for MSc Biomedical Science (Haematology) and MSc Biomedical Science (Blood Science)					
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard	
Pre-requisites			Co- requisites			
Excluded Combinations			Module Entry requirements			
Valid From	Sept 2012		Valid to	September 2018		
CAP Approval Date	30th May 2012					

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module students will be able to: • critically evaluate the processes involved in the maintenance of normal blood composition and function; (exam – A1 and/or coursework - B) • critically discuss the biological bases of selected haematological disease states; (exam – A1 and/or coursework - B) • interpret bold parameters that characterise selected disease states; (exam – A1 and/or coursework - B) • appraise the nature and significance of investigative haematology and its role in the diagnostic process; (exam – A1 and/or coursework - B) • describe in detail the nature and significance of human blood groups of major clinical importance and critically discuss barriers they represent for transfusion; (exam – A1 and/or coursework - B) • discuss critically the strategies which underpin optimal utilisation of donated blood; (exam – A1 and/or coursework - B) • critically appraise appropriate methods for the demonstration of different antigen-antibody reactions and evaluate the chemical and physical variables which govern their sensitivity; (exam - A1 and/or coursework - B) • describe in detail the biological bases of the different immunohaemolytic disease states; (exam – A1 and/or coursework - B) • critically appraise relevant scientific literature. (exam – A1 and/or coursework - B)
Syllabus Outline	• Physical and chemical requirements for optimal haemopoiesis throughout life. Content of the blood and bone marrow. Reference values. Ontogeny and sites of haemopoiesis. Regulation of haemopoiesis. Nutritional requirements. • 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. • 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. • 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 and tissue groups. The major blood polymorphism's e.g. ABO, Rh, and selected other blood group systems. Blood group structure, function and relevance to transfusion. • Compatibility of blood and organs. In vitro antibody-antigen reactions for the selection of compatible blood. Optimisation of detection techniques for in vitro antibody-antigen reactions. • Immunohaematology. 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.
Contact Hours/Scheduled Hours	The student will have a minimum of 3 hours per week contact time over the two semesters. This will typically take the form of lectures with tutorials as appropriate. The module will be delivered by Applied Sciences staff assisted by invited specialists. Attendance of the conference week will also be required.
Teaching and Learning Methods	This module will be delivered as a series of keynote lectures, designed to highlight the important principles and concepts of each topic and to provide a framework for personal study. Lectures will be supported by tutorials, case studies, guided reading, intranet tutorials and a specially written web site. Tutorials will explore in more detail, selected topics from the syllabus and will be highly interactive. They will also be used to encourage students to utilise their existing knowledge to develop their understanding of haematology. Case studies will build upon lectures and facilitate the development of analytical and interpretative skills. Guided reading will be provided in advance of lectures and will direct the student to both preparative and supplementary information sources. Copies of all handouts will be available on Blackboard. A Web site has been constructed which links to some of the best available information sources on the internet. All links have been investigated for their validity and usefulness in this context. Students on the module will also be required to attend a conference week at an appropriate time in the year (dependent on changes to the academic calendar). During this week a range of visiting lecturers will be brought in to give keynote lectures (for example based on their clinical practice) or research focused lectures that map to the syllabus content. The conference week will also give students an experience of what it is like to attend a scientific conference, with an intensive schedule of talks across the week to be attended.
Reading Strategy	At Masters level students are expected to demonstrate the ability to find

	information, assess its relevance and utilise it in their studies in an independent manner; however the programme team recognise that students entering the programme may be at different levels of the development of the skills required to undertake this successfully. Therefore module leaders will provide you with a starting point in terms of core readings and the lecture material will also give you a strong starting point. However it is in the area of further reading that you need to show the independence of skills and of knowledge development, so you will need to find the Further Readings yourself. However, the skills required to do this are covered during the early stages of the course, during induction week you will have a library induction session, in the Research Methods and Practical Skills module that you take during the first semester we will cover how to undertake a literature search and how to assess and use the material you find appropriately. The programme tutorials will provide opportunities for you to further develop these skills and to ask any questions that you have. Further support and guidance is available through the library which runs workshops that you can sign up to, and also has advice in its website. Module leaders will give you a clear indication of any essential reading, and point you towards the appropriate textbooks and journals for their discipline. This will usually be in the form of a reading list in the module guide; the indicative list on this module specification is as it states indicative as the relevant available books and journals can change regularly – and the module specification is a document written only once when a module is modified and can last for many years. So it is important that you refer to the reading list for your specific year group as the definitive document. All students will be encouraged to make full use of the print and electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject relevant resources and services, and to the library catalogue. Many resources can be accessed remotely.
Indicative Reading List	The module texts are • "Essential Haematology." Hoffbrand A. V. Pettit J. E. & Moss P.A.H.(Wiley Blackwell) • "Transfusion Science." Overfield J., Dawson M.M., & Hamer D. (Scion Publishing Ltd.) Indicative sources: All aspects of the syllabus are covered in general Haematology and Molecular Biology books such as: • "Postgraduate Haematology." Hoffbrand A.V., Tuddenham E.G.D. & Catovsky D. .(Wiley Blackwell) • "Molecular Hematology." Provan D. & Gribben J. (Wiley Blackwell) •" Lecture Notes on Haematology." Hughes-Jones N.C. (Wiley Blackwell) • "Practical Management of Haemoglobinopathies." Okpala I.E. .(Wiley Blackwell) • "Human Blood groups." Daniels G. .(Wiley Blackwell) •" Mollison's Blood Transfusion in Clinical Medicine.", Klein, H.& Anstee D.J. (Blackwell Publishing) Suitable textbooks can be found in Section 616 and the short-loan section of the library.

Part 3: Assessment	
Assessment Strategy	All specialist subject modules on the MSc BMS programme have a 50:50 weighting of course work to final exam. Coursework as decided by the module leader in line with the programme assessment strategy.

Identify final assessment component and element	**A1**	
% weighting between components A and B (Standard modules only)	**A:** **50**	**B**: **50**

First Sit	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Exam (3 hours) – final assessment	100
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Essay (1500 words)	50
2. Case Study (1500 words)	50

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Exam (3hours)	100
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Essay (1500 words)	50
2. Case Study (1500 words)	50

If a student is permitted an **EXCEPTIONAL RETAKE** of the module the assessment will be that indicated by the Module Description at the time that retake commences.