Module Title **Haematology and Transfusion Science** **Keywords** Diseases of blood, analysis of blood cells and coagulation factors, blood groups, antibody screening, histocompatability, immunogenetics, transfusion centres, blood products.	Reference AS4901 SCQF SCQF Level 10 SCQF Points 30 ECTS Points 15 Created May 2002 Approved May 2011 Amended May 2006 Version No. 1

This Version is No Longer Current

The latest version of this module is available here

Prerequisites for Module

Students should be familiar with the physiology of the vascular system, the principles of molecular biology and genetics and clinical immunology.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To provide students with the ability to explain diseases of the blood, Haemagglutination, serological techniques, ABO, RhD and other blood groups. Antibody screening, compatability testing, transfusion reactions. HDN antibody monitoring, anti-D prophylaxis programme. Blood group reagent red cells/antisera, selection of grouping controls. Transfusion centres, effective operation of, good practice, quality control. Blood products preparation: erythrocytes, platelets, plasma, clotting factors and other biopharmaceutical products related to blood, recombinant blood products. Histocompatability and immunogenetics. Evolution, function, genetic organisation, role in transplantation and blood transfusion, genetic anthropology and epidemiological studies. Methods for HLA typing, serological and molecular techniques.

Indicative Student Workload

interpret data obtained from the analysis of blood and understand the essential features of transfusion science.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1. Discuss the quality management systems required of an automated laboratory.
2. Discuss the diseases caused by abnormailities of bone marrow, blood cells and plasma components and explain the nature and clinical importance of the main human blood groups.
3. Discuss the methods and/or procedures used for haematological investigation and transfusion science and interpret results obtained from analysis of blood cells and coagulation factors.
4. Discuss the operational procedures and good practices that are in place to meet the needs of the Transfusion

	Full Time
Contact Hours	
Assessment	4
Lectures	30
Tutorials/Seminars/Demonstrations	14
Directed Study	
Directed Study	150
Private Study	
Private Study	102

Mode of Delivery

This is a lecture based course supplemented with tutorial sessions, e-learning and case studies involving interpretation of clinical laboratory data.

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,2,4,5
Component 2	3

Component 1 will consist of a closed book examination.

Component 2 is clinical data analysis.

Indicative Bibliography

1. MOORE, G., KNIGHT, G. and BLANN, A. *Haematology*. Current Ed. Oxford University Press.

of the Transfusion Science Service in Scotland.
5. Discuss the significance of histocompatability and immunogenetics in transplantation and blood transfusion.

Indicative Module Content

Haematological diseases: anaemia, polycythaemia, leucopenia, leucocytosis, thrombocytopenia, thrombocytosis, leukaemias, bleeding disorders, thrombotic disorders.
Analytical techniques: sample selection, manual and automated methods, cell counting, haemoglobinometry, cell identification. Coagulation tests.
Recognition of haemoglobin variants, haematinic assays.
Interpretation of data: normal range, quality control, presentation of results, sample quality.

2. KNIGHT, R. *Transfusion and Transplantation Science.* Current Ed. Oxford University Press.
3. OVERFIELD, J., DAWSON, M. and HAMER, D. *Transfusion Science*. Current ed. Scion Publishing Ltd.
4. HOFFMAN, V. and MOSS,P. *Essential Haematology*. Current Ed. Wiley Blackwell.
5. HALL, A., SCOTT, C., and BUCKLAND, M. *Clinical Immunology*. Current Ed. Oxford University Press.