

Prifysgol Wreccsam Wrexham University

Module specification

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Module Code	SCI729
Module Title	Blood Sciences
Level	7
Credit value	20
Faculty	FAST
HECoS Code	100912
Cost Code	GAFS

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
MSc Biomedical Science	Core
Postgraduate Certificate Biomedical Science	Option

Pre-requisites

N/A.

Breakdown of module hours

Learning and teaching hours	21 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	21 hrs
Placement / work based learning	0 hrs
Guided independent study	179 hrs
Module duration (total hours)	200 hrs

For office use only	
Initial approval date	17/8/23
With effect from date	1/9/23
Date and details of revision	
Version number	1

Module aims

The module aims to build on previous knowledge of biology of disease and focuses on clinical and current research topics in haematology and clinical biochemistry (blood sciences).

Specifically, the module will allow students to develop an understanding of transfusion science and various clinical haematological and biochemical (blood sciences) disorders, and to develop an in-depth knowledge of the laboratory investigations performed in the diagnosis and management of such diseases.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Critically evaluate various clinical haematological conditions (e.g. haemolytic anaemia's, myelodysplasia, leukaemia) and blood transfusion science
2	Critically evaluate various clinical biochemistry conditions (e.g. multiple myeloma, thyroid Pathophysiology, disorders of lipid metabolism)
3	Interpret data relevant to the blood sciences (laboratory diagnosis and management), applying a scientific approach to problem solving
4	Critically evaluate scientific literature appropriate to the field

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

Learning outcomes assessment will be summative by means of a **case study** (4000 words, 100% of module assessment). This written coursework is expected to be of high standard and well-researched with current references provided. Assessment topics will involve topics pertaining to the blood sciences.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1-4	Written Assignment	100

Derogations

N/A

Learning and Teaching Strategies

The module will be delivered through a mixture of online and face-to-face lectures, tutorials and directed private study (blended learning). Students will discuss and share ideas through online student-led seminars and peer group discussion, practical exercises and review of published research.

Indicative Syllabus Outline

- Classification of anaemia (e.g. microcytic, macrocytic and haemolytic)
- Haemostasis and bleeding disorders
- Haematological malignancies and myeloproliferative disorders
- Blood group systems (e.g. ABO, Rh, Kidd, Duffy, Kell etc.)
- Hazards of Transfusion
- Blood products and components (e.g. fresh frozen plasma, cryoprecipitate, etc.)
- Pre-transfusion testing (e.g. antibody screening/identification)
- Biochemical tests for selected disorders of organ function (e.g. liver function tests)
- Clinical enzymology and biomarkers
- Electrolytes and acid-base balance
- Calcium and bone disease
- Common drugs and poisons (toxicology)
- Current research and clinical case studies relevant to the blood sciences

Indicative Bibliography:

Essential Reads

Blann, A. & Ahmed, N. (2023). *Blood Sciences: Principles & Pathology, 2nd Ed.* Chichester, United Kingdom: Wiley.

Other indicative reading

- Hoffbrand, A.V. & Moss, P.A.H. (2015). *Essential haematology*. Oxford, United Kingdom: Wiley-Blackwell.
- Knight, R. (Eds.). (2013). *Transfusion & transplantation science*. Oxford, United Kingdom: Oxford University Press.
- Ahmed, N. & Smith, C.A. (2016), *Clinical biochemistry, 2nd Ed.* Oxford, United Kingdom: Oxford University Press.
- British Journal of Biomedical Science (<http://www.bjbs-online.org/>)
- British Journal of Inflammation (<http://www.journal-inflammation.com/>)
- European Journal of Medical Research (<http://www.eurjmedres.com/>)
- PLOS Medicine (www.plosmedicine.org/)

Employability – the University Skills Framework

Each module and programme is designed to cover core Graduate attributes with the aim that each Graduate will leave the University having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes

Engaged
Creative
Ethical

Key Attitudes

Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets

Digital Fluency
Organisation
Critical Thinking
Emotional Intelligence
Communication