

# 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

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

## Pre-requisites

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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
<b>Total active learning and teaching hours</b>	<b>21 hrs</b>
Placement / work based learning	0 hrs
Guided independent study	179 hrs
<b>Module duration (total hours)</b>	<b>200 hrs</b>

<b>For office use only</b>	
Initial approval date	17/8/23
With effect from date	1/9/23
Date and details of revision	July 2024 updated Reading List
Version number	2

## Module aims

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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

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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

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N/A

## Learning and Teaching Strategies

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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

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- 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:

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### Essential Reads

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

## Other indicative reading

Ahmed, N. & Smith, C.A. (2016), *Clinical biochemistry, 2<sup>nd</sup> Ed.* Oxford, United Kingdom: Oxford University Press.

Avent, N. (2018), *Transfusion and Transplantation Service.* 2<sup>nd</sup> ed. Oxford: Oxford University Press.

Hoffbrand, A.V. (2024), *Hoffbrand's Essential Haematology.* 9th ed. Chichester: Wiley.

- 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/](http://www.plosmedicine.org/))

## Employability – the University Skills Framework

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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