

LF266-15 Blood and Circulation for Neuroscience

26/27

Department

Life Sciences

Level

Undergraduate Level 2

Module leader

Mark Wall

Credit value

15

Module duration

5 weeks

Assessment

Multiple

Study location

University of Warwick main campus, Coventry

Description

Introductory description

The overall aim of the module is to describe the haematological system (blood and the tissues and organs associated with it) and the cardiovascular system (CVS) in an integrated manner, thereby giving students a good understanding of the physiology, in health and disease, of these two linked systems.

Module aims

The lectures fall into three segments: Renal Structure and Function, Haematology – the study of blood (aka blood sciences) and the Cardiovascular System (CVS).

Students will learn about renal function (kidney structure and function), cardiovascular pathology (including conditions such as hypertension and myocardial infarction) and cardiovascular risk (links with lipids, lipid-lowering drugs, etc.). These lectures build on BS129 Physiology and Metabolism.

In the Haematology lectures, students will learn the nature of blood – the cellular and non-cellular components, and how it is formed (haematopoiesis). Students will also gain an understanding of

the various pathological conditions associated with blood, how they are recognised, the consequences, and how they are treated.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Lectures 1 and 2: Kidney structure and function

Lecture 3: Cardiovascular Risk

Lecture 4: Blood cells, Plasma and Serum

Lecture 5: Haematopoiesis

Lecture 6: Blood transfusion

Lecture 7: Blood disorders

Lecture 8 - Hypertension (MW)

Lecture 9 - Angina

Lecture 10 - Heart Failure

Lecture 11 - Cardiac Arrhythmias

Lecture 12 - The Pharmacology of Anti-arrhythmic drugs

ECG workshop and self-directed learning

Learning outcomes

By the end of the module, students should be able to:

- The biological principles of haematology including blood structure and homeostasis (including kidney)
- The biological basis of circulation, especially cardiac and vascular processes.
- The biological basis of neurological function, including development of the central nervous system at a cellular level.
- The functioning of these systems in both health and disease including the current treatment options for specific examples.

Indicative reading list

[Reading lists can be found in Talis](#)

Subject specific skills

Explain the basics of haematology, including the role of kidney; formation, structure and function of blood cells

Understand the rationale for, and biology of, blood transfusion

Understand the biology of circulation through disease processes (hypertension, myocardial infarction, angina, cardiovascular disease, heart failure, arrhythmias)

Explain the current treatment options for example blood and circulatory diseases

Transferable skills

Adult learning, self-directed learning, team based learning and quantitative analysis of data.

Study

Study time

Type	Required
Lectures	15 sessions of 1 hour (9%)
Other activity	10 hours (6%)
Private study	73 hours 30 minutes (42%)
Assessment	75 hours (43%)
Total	173.5 hours

Private study description

73.5 hrs of self-study and directed reading

Other activity description

In-module assessment

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group D2

	Weighting	Study time	Eligible for self-certification
In-class assignment 1	20%	30 hours	Yes (extension)

Authentic assessment, based on a common problem or dataset researchers would deal with on a regular basis in the academic environment. This is in-line with both AQSC and RSB requirements on assessments

	Weighting	Study time	Eligible for self-certification
In-class assignment 2 Blood and Circulation ECG Workshop	10%	20 hours	No
Closed-book end-of-year examination In-person locally-timetabled closed-book end-of-year examination	70%	1 hour 30 minutes	No

Assessment group R2

	Weighting	Study time	Eligible for self-certification
Closed-book examination In-person locally-timetabled closed-book end-of-year examination	100%		No

Feedback on assessment

Pastoral meetings with personal tutors

[Past exam papers for LF266](#)

Availability

Post-requisite modules

If you pass this module, you can take:

- LF320-15 Advanced Cardiovascular Medicine

Courses

This module is Core for:

- Year 2 of ULFA-B140 Undergraduate Neuroscience (BSc)
- Year 2 of ULFA-B142 Undergraduate Neuroscience (MBio)
- Year 2 of ULFA-B143 Undergraduate Neuroscience (with Industrial Placement) (MBio)
- Year 2 of ULFA-B141 Undergraduate Neuroscience (with Placement Year) (BSc)