

LF252-15 Molecular Endocrinology

26/27

Department

Life Sciences

Level

Undergraduate Level 2

Module leader

Cathy Slack

Credit value

15

Module duration

10 weeks

Assessment

Multiple

Study location

University of Warwick main campus, Coventry

Description

Introductory description

This module provides a foundation for the further study of endocrinology at the cellular & molecular level as well as providing a firm basis for understanding normal hormonal control. The module will describe basic endocrinology and its regulation in humans. The module will provide a basic understanding of the molecular mechanisms of hormone action and will include a description of some of the main hormone receptors and their signal transduction pathways. Where appropriate, the underlying pathologies of important endocrine diseases will be discussed.

Topics will include: hypothalamic and pituitary function in endocrine systems, function of adrenal and thyroid glands, female reproductive endocrinology including endocrine control of pregnancy; the endocrine pancreas and glucose homeostasis; calcium homeostasis, and endocrine function within the gastrointestinal tract.

Module aims

This module aims to provide a detailed introduction to the physiological processes by which the human endocrine system regulates homeostasis to maintain a relatively constant internal environment, including the mechanisms by which hormones and their signalling pathways underpin this.

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.

Indicative module content: hypothalamic-pituitary regulation of endocrine systems, growth factors and growth hormone, thyroid hormones, glucose homeostasis and diabetes, adrenal hormones, parathyroid hormone and calcium regulation, reproductive hormones, receptors and second messengers, G protein-coupled receptors, steroid hormone receptor signalling and receptor tyrosine kinase signalling.

Learning outcomes

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

- Describe the human endocrine system and explain its contribution to normal physiology and pathology.
- Describe how physiological systems are maintained around a set-point and discuss the regulatory processes that control homeostasis.
- Discuss the methods used to diagnose endocrine disease.
- Apply fundamental knowledge about the hormonal regulation of homeostasis to real-world scenarios.

Indicative reading list

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

Subject specific skills

Structure and function of different hormone classes and how they initiate the activation of cell signalling pathways.

Physiological regulation and organisation of the human endocrine system.

Pathophysiology of endocrine disease.

Transferable skills

Communication

Critical Thinking

Information Literacy

Professionalism

Teamwork

Study

Study time

Type	Required
Lectures	15 sessions of 1 hour (10%)
Private study	103 hours 30 minutes (69%)
Assessment	31 hours 30 minutes (21%)
Total	150 hours

Private study description

Self-directed learning and preparation for assessments.

Costs

No further costs have been identified for this module.

Assessment

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

Students can register for this module without taking any assessment.

Assessment group D3

	Weighting	Study time	Eligible for self-certification
In-class assignment	30%	30 hours	No
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.			
Closed-book end-of-year examination	70%	1 hour 30 minutes	No
In-person locally-timetabled closed-book end-of-year examination			

Assessment group R3

	Weighting	Study time	Eligible for self-certification
Closed-book examination	100%		Yes (waive)
In-person locally-timetabled closed-book examination			

Feedback on assessment

Pastoral meetings with personal tutors.

[Past exam papers for LF252](#)

Availability

Courses

This module is Core for:

- UBSA-C1B9 Undergraduate Biomedical Science
 - Year 2 of C1B9 Biomedical Science
 - Year 2 of C1B9 Biomedical Science
 - Year 2 of C1B9 Biomedical Science
- ULFA-C1A3 Undergraduate Biomedical Science (MBio)
 - Year 2 of C1A3 Biomedical Science
 - Year 2 of C1B9 Biomedical Science
- Year 2 of ULFA-C1A7 Undergraduate Biomedical Science with Industrial Placement (MBio)
- ULFA-CB18 Undergraduate Biomedical Science with Placement Year
 - Year 2 of CB18 Biomedical Science with Placement Year
 - Year 2 of CB18 Biomedical Science with Placement Year
 - Year 2 of CB18 Biomedical Science with Placement Year
- 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)

This module is Core optional for:

- Year 2 of UMDA-CF11 Undergraduate Integrated Natural Sciences (BSc)
- Year 2 of UMDA-CF10 Undergraduate Integrated Natural Sciences (MSci)

This module is Optional for:

- UBSA-C700 Undergraduate Biochemistry
 - Year 2 of C700 Biochemistry
 - Year 2 of C700 Biochemistry
- ULFA-C1A2 Undergraduate Biochemistry (MBio)
 - Year 2 of C1A2 Biochemistry
 - Year 2 of C700 Biochemistry
- Year 2 of ULFA-C702 Undergraduate Biochemistry (with Placement Year)
- Year 2 of ULFA-C1A6 Undergraduate Biochemistry with Industrial Placement (MBio)