

# LF105-12 Animal Anatomy and Histology

**21/22**

**Department**

Life Sciences

**Level**

Undergraduate Level 1

**Module leader**

Kevin Moffat

**Credit value**

12

**Module duration**

10 weeks

**Assessment**

Multiple

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

How physiology is manifested and observed at a cellular level will be explored in this module through an introduction to the field of Anatomy and Histology.

The course is aimed primarily at those who already have A-level Biology and who are embarking on a cell- and molecularly-oriented Biology degree, and who may wish to pursue physiological and biomedical subjects in future years.

[Module web page](#)

### Module aims

This module offers an overview of animal biology, explaining the evolutionary reasons for adapted and shared anatomy. How these are manifested and observed at a cellular level will be explored. The module is intended to broaden student's biological background and to support second year modules including: LF215 Genetics and Evolution, LF209 Human and Animal Physiology, LF210 Signaling and Integration and LF217 Multicellular Systems, as well as final year modules BS373 Principles of Development, BS362 Integrative Neurosciences, BS358 Biological Clocks.

## 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.

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The course is aimed primarily at those who already have A-level Biology and who are embarking on a cell- and molecularly-oriented Biology degree, and who may wish to pursue physiological and biomedical subjects in future years.

The module is intended to broaden student's biological background and to support second year modules including: LF209 Human and Animal Physiology, LF210 Signalling and Integration and LF217 Multicellular Systems, as well as a number of final year modules for example: BS373 Principles of Development, BS362 Integrative Neurosciences, BS358 Biological Clocks.

Lecture 1: Why study Anatomy?

Lecture 2: An Introduction to Histology

Lecture 3: An Introduction to Microscopy

Lecture 4: An Introduction to Pathohistology

Computer Workshop (1 x 2 hours) : Open Science Computer Laboratory on Histology

Laboratory Workshops: 3 x 2 hour practical workshops , plus 1x3 hour open microscopy access (supervised) in the laboratories.

Workshops include:

- Mouse dissection and identification of tissues before embedding
- Post embedding techniques and microtome demonstration for preparing paraffin-wax sections
- Achieving Kohler illumination on a compound microscope
- Staining tissue with haematoxylin and eosin
- Practicing descriptions of a number of key mammalian tissues

## Learning outcomes

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

- 1. To understand the evolutionary link between extant animals and appreciate the model organisms that are currently used in biomedical research
- 2. To be able to understand the advantages and limitations of comparative anatomy
- 3. To learn and apply standard microscopy techniques
- 4. To understand the principles of histology, including material preparation, staining and visualisation
- 5. To recognise morphological and pathological differences in some tissues

## Indicative reading list

Cleveland, Hickman, Integrated Principles of Zoology, Dubuque, Iowa: McGraw–Hill Education, 2014

Cui, Dongmei...[et al.], Atlas of Histology: with functional and clinical correlations, Philadelphia: Wolters Kluwer health/Lippincott Williams & Wilkins, 2011

Eroschenko, Victor P., DiFiore's Atlas of Histology with Functional Correlations, Baltimore MD; London: Wolters Kluwer Health/Lippincott Williams and Williams, 2013

Hillis, David M., Sadava, David, Hill, Richard W., Price, Mary V., Principles of Life, Sunderland, MA, U.S.A.: Sinauer Associates: Gordonsville, VA, U.S.A. : MPS/W.H. Freeman & Co, 2014

Peckham, Michelle, Histology at a Glance, [electronic resource], 2011

Ross, Michael H., Kaye Gordon I., Wojciech, Pawlina, Histology: a text and atlas, Lippincott Williams and Wilkins, 2003

Ross, Michael H., Wojciech, Pawlina, Histology: a text and atlas: with correlated cell and molecular biology, Wolters Kluwer/Lippincott, Williams & Wilkins Health, 2011

Young, Barbara, BSc Med Sci (Hons), PhD, MB BChir, MRCP, FRCPA, O'Dowd, Geraldine, BSc (Hons), MBChB (Hons), FRCPATH, Woodford, Phillip, MB BS, FRCPA, Wheater's Functional Histology: a text and colour atlas, Churchill, Livingstone, Elsevier, 2014

## **Subject specific skills**

1. To be able to understand the advantages and limitations of histology
2. To learn and understand the use of standard microscopy techniques
3. To understand the basics of histology, including material preparation, staining and visualisation
4. To be able to practically recognise pathological differences in some tissues

## **Transferable skills**

1. Self directed learning
2. Adult learning
3. Practical skills and techniques

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## **Study**

### **Study time**

<b>Type</b>	<b>Required</b>
Lectures	16 sessions of 1 hour (13%)
Practical classes	3 sessions of 1 hour (2%)
Total	120 hours

<b>Type</b>	<b>Required</b>
Private study	101 hours (84%)
Total	120 hours

### **Private study description**

Self directed learning and preparation for the laboratory practical sessions

### **Costs**

No further costs have been identified for this module.

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### **Assessment**

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

#### **Assessment group A2**

	<b>Weighting</b>	<b>Study time</b>
Practical Assessment	60%	
Lab book assessment	40%	

#### **Assessment group R**

	<b>Weighting</b>	<b>Study time</b>
other	100%	

### **Feedback on assessment**

Post-exam board feedback (cohort level)

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### **Availability**

### **Courses**

This module is Core optional for:

- UBSA-C1B9 Undergraduate Biomedical Science
  - Year 1 of C1B9 Biomedical Science
  - Year 1 of C1B9 Biomedical Science
  - Year 1 of C1B9 Biomedical Science
- ULFA-C1A3 Undergraduate Biomedical Science (MBio)

- Year 1 of C1A3 Biomedical Science
- Year 1 of C1B9 Biomedical Science
- ULFA-CB18 Undergraduate Biomedical Science with Placement Year
  - Year 1 of CB18 Biomedical Science with Placement Year
  - Year 1 of CB18 Biomedical Science with Placement Year
  - Year 1 of CB18 Biomedical Science with Placement Year

This module is Optional for:

- Year 1 of ULFA-C1A7 Undergraduate Biomedical Science with Industrial Placement (MBio)
- Year 1 of ULFA-B142 Undergraduate Neuroscience (MBio)
- Year 1 of ULFA-B143 Undergraduate Neuroscience (with Industrial Placement) (MBio)
- Year 1 of ULFA-B141 Undergraduate Neuroscience (with Placement Year) (BSc)

This module is Option list A for:

- Year 1 of ULFA-B140 Undergraduate Neuroscience (BSc)