LF134-15 Anatomy and Histology

24/25

Department
Life Sciences
Level
Undergraduate Level 1
Module leader
Ian Edwards
Credit value
15
Module duration
10 weeks
Assessment
Multiple
Study location
University of Warwick main campus, Coventry

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 and third year modules.

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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Lectures are aimed to introduce students to the anatomy of all major mammalian systems, including: Lung, Liver, pancreas, GI tract, Skeletal muscle, the heart, bone, neural tissue, skin, the ovaries and testes. Some focus on tissue development is included to show how tissues are regulated by genes.

There is a supporting computer workshop
Computer Workshop (1 x 2 hours) : Open Science Computer Laboratory on Histology

There are 2 supporting computer workshops
Laboratory Workshop: 3 x 2 hour practical workshops, including:

- 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

Open microscopy access (supervised) in the laboratories (1x3 hour) .

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/Lippeincott 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

Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Practical classes	3 sessions of 2 hours (4%)
Supervised practical classes	1 session of 3 hours (2%)
Other activity	2 hours (1%)
Private study	119 hours (79%)
Total	150 hours

Private study description

Self directed learning and preparation for the laboratory practical sessions

Other activity description

Active learning workshops to support lectures

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 A

	Weighting	Study time
Practical online test	60%	
Lab book assessment	40%	

Assessment group R

	Weighting	Study time
other	100%	

Feedback on assessment

Post-exam board feedback (cohort level)

Availability

Courses

This module is Core 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
- Year 1 of ULFA-C1A7 Undergraduate Biomedical Science with Industrial Placement (MBio)
- 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
- Year 1 of ULFA-B140 Undergraduate Neuroscience (BSc)
- 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 Optional for:

- UBSA-3 Undergraduate Biological Sciences
    - Year 1 of C100 Biological Sciences
    - Year 1 of C100 Biological Sciences
    - Year 1 of C102 Biological Sciences with Cell Biology
    - Year 1 of C103 Biological Sciences with Environmental Resources
    - Year 1 of C104 Biological Sciences with Microbiology
    - Year 1 of C105 Biological Sciences with Molecular Genetics
    - Year 1 of C107 Biological Sciences with Virology
- Year 1 of ULFA-C1A1 Undergraduate Biological Sciences (MBio)
- Year 1 of ULFA-C113 Undergraduate Biological Sciences (with Placement Year)
- Year 1 of ULFA-C1A5 Undergraduate Biological Sciences with Industrial Placement (MBio)