School of Medicine

MEDI210: Histology

Subject Outline
Autumn, 2016
On-Campus
Wollongong

Subject Information
Credit Points: 6
Pre-requisite(s): MEDI111 or MEDI112 or SHS111 or SHS112
Co-requisite(s): Nil
Restrictions: A quota may apply in any one year
Contact Hours: 2 hrs Lect, 3 hrs Pract, 2-3 hrs Study time per week

Subject Contacts
Subject Coordinator/Lecturer

<table>
<thead>
<tr>
<th>Name</th>
<th>Prof Paul Else</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Building 41, Room 337</td>
</tr>
<tr>
<td>Telephone</td>
<td>61 2 4221 3496</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:paul_else@uow.edu.au">paul_else@uow.edu.au</a></td>
</tr>
<tr>
<td>Consultation mode and times</td>
<td>Email for appointment</td>
</tr>
</tbody>
</table>

Student Support and Advice
For general enquiries please contact StudentHub 41:

Location: 41.138B
Telephone: 61 2 4221 3492
Email: smah-students@uow.edu.au
Student Consultation and Communication

University staff receive many emails each day. In order to enable them to respond to your emails appropriately and in a timely fashion, students are asked to observe basic requirements of professional communication:

Please ensure that you include your full name and student number and identify your practical class or tutorial group in your email so that staff know who they are communicating with and can follow-up personally where appropriate.

Consider what the communication is about
- Is your question addressed elsewhere (e.g. in the subject outline or, on the eLearning site)?
- Is it something that is better discussed in person or by telephone? This may be the case if your query requires a lengthy response or a dialogue in order to address. If so, see consultation times above and/or schedule an appointment.
- Are you addressing your request to the most appropriate person?

Specific email subject title to enable easy identification of issue
- Identify the subject code of the subject you are enquiring about (as staff may be involved in more than one subject) put this in the email subject heading. Add a brief, specific query reference after the subject code where appropriate.

Professional courtesy
- Address the staff member appropriately by name (and formal title if you do not yet know them).
- Use full words (avoid ‘text-speak’ abbreviations), correct grammar and correct spelling.
- Be respectful and courteous.

Allow 3 – 4 working days for a response before following up. If the matter is legitimately urgent, you may wish to try telephoning the staff member.
Table of Contents

Section A: General Information ............................................................................................................... 4
  Subject Learning Outcomes .................................................................................................................. 4
  Subject Description .............................................................................................................................. 4
  eLearning Space .................................................................................................................................. 4
  Lecture, Tutorial, Laboratory Times .................................................................................................... 4
  Readings, References and Materials .................................................................................................... 4
    Textbooks .......................................................................................................................................... 4
    Prescribed Readings (includes eReadings) ...................................................................................... 4
    Materials .......................................................................................................................................... 4
  Recommended Readings ....................................................................................................................... 5
  Recent Changes to this Subject ............................................................................................................. 5
  Ethical Objection to the Use of Animal and Animal Products ............................................................. 5
  Laboratory Safety Guidelines ............................................................................................................. 5
  Timetable of Topics* ............................................................................................................................ 6
Section B: Assessment ............................................................................................................................ 7
  Assessment Summary .......................................................................................................................... 7
  Details of Assessment Tasks ................................................................................................................ 7
  Minimum Requirements for a Pass in this Subject ............................................................................. 8
    Minimum Student Attendance and Participation ........................................................................... 8
  Scaling ............................................................................................................................................... 8
  Late Submission ................................................................................................................................. 8
    Late Submission Penalty .................................................................................................................. 8
  Supplementary Assessments ............................................................................................................... 9
  System of Referencing Used for Written Work .................................................................................. 9
  Use of Internet Sources ...................................................................................................................... 9
  Plagiarism ........................................................................................................................................... 9
  Submission of Assessments ................................................................................................................ 10
  Assessment Return ............................................................................................................................. 10
Section C: General Advice ...................................................................................................................... 11
  University Policies ............................................................................................................................. 11
  Student Support Services and Facilities ............................................................................................. 12
  Student Etiquette ................................................................................................................................ 12
  Version Control Table ......................................................................................................................... 12
Section A: General Information

Subject Learning Outcomes

<table>
<thead>
<tr>
<th>On completion of this subject, students should be able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify basic structures in a histological section</td>
</tr>
<tr>
<td>2. Relate structure to function</td>
</tr>
<tr>
<td>3. Deduce the functions of unfamiliar tissue based on their histological appearance</td>
</tr>
<tr>
<td>4. Communicate information on basic aspects of histology for all tissues and major organ systems of the body</td>
</tr>
</tbody>
</table>

Subject Description

This subject provides an introduction to the microscopic structure and function of mammalian cells, tissues and organs. The practicals and lectures will emphasise functional histology. Students will examine cell ultrastructure, gain an appreciation of histological methods and acquire a detailed understanding of the major tissue types and how these tissues are integrated to produce the functional characteristics of the major organs/systems of the body. These include the cardiovascular, lymphatic, immune, integumentary, respiratory, digestive, urinary, endocrine and reproductive systems.

eLearning Space

This subject has materials and activities available via eLearning. To access eLearning you must have a UOW user account name and password, and be enrolled in the subject. eLearning is accessed via SOLS (student online services). Log on to SOLS and then click on the eLearning link in the menu column. For information regarding the eLearning spaces please use the following link: [http://uowblogs.com/moodlelab/files/2013/05/Moodle_StudentGuide-1petpo7.pdf](http://uowblogs.com/moodlelab/files/2013/05/Moodle_StudentGuide-1petpo7.pdf)

Lecture, Tutorial, Laboratory Times

All timetable information is subject to variation. Check the latest information on the university web timetable via the Timetable link on the Current Students webpage or log into SOLS to view your personal timetable prior to attending classes.

All timetable information is subject to variation. Check latest timetabling information on the 'Current Student' webpage on UOW website or log into SOLS to view your personal timetable prior to attending classes. [http://www.uow.edu.au/student/index.html](http://www.uow.edu.au/student/index.html)


Readings, References and Materials

Textbooks

The following text(s) will need to be purchased by students enrolled in this class.

Ross, M. H., and Pawlina W. Histology: A Text and Atlas, 7th edition, Williams and Wilkins, Sydney (or earlier editions will also be more than adequate).

Prescribed Readings (includes eReadings)

Nil

Materials

Nil
Recommended Readings

The following references complement the prescribed readings and textbooks:

The library has a reasonable number of Histology textbooks with most of the histology texts call #’s around 611-616. There are also a number of CD-ROMs. Firstly from Micron Biosystems a CD called MedPics that cover most areas of Histology and also some Pathology. The MedPics CD is a very old CD (still works well but may require some monitor colour adjustment in your computers control panel etc). Computers requirements of these CD’s are very basic, other than needing a CD-drive, and they will work on PC or Mac.

Also available for loan is a CD that has won multiple awards for excellence. Called Virtual Microscope: General and Special Histology (Version 2) the benefits of this CD is that it removes the requirements for a microscope. Using this CD more material can be covered in the same time (not requiring the focusing of the microscope and the use of slides) on a PC – however recent PCs can have some problems and to get over this the alternative is to use the two computers set-up in the foyer of the third floor of building 41 – you can use these at anytime the building is open. These CD’s are used as an alternative to microscope driven practs in the later part of the practical course once proficiency in microscopy has been gained.

Recommended readings are not intended as an exhaustive list, students should use the Library catalogue and databases to locate additional resources.

Recent Changes to this Subject

i. Nil

Ethical Objection to the Use of Animal and Animal Products

In order to achieve specific learning objectives, the use of animals, animal tissues, and or animal-derived products (such as sera) is inherent and unavoidable. Students with conscientious objections to this use should not enrol in this subject.

Students who intend to avoid a particular learning activity on the basis of conscientious objection should notify the subject coordinator in writing as soon as possible and not later than the end of Week 1 of the session. Students who do not participate in a particular learning activity are required to complete an alternative exercise (a CD-ROM is available) or attend the practical and “observe”. The material involved is examinable and the prac must be written up and completed in your workbook. For further information, refer to http://www.uow.edu.au/about/policy/UOW058708.html

Laboratory Safety Guidelines

The rules below are general rules that are required in laboratories.

- Before commencing your project you are to ensure that you understand specific procedures for the laboratory in which you work.
- Never use any equipment or attempt any experiment without checking the safety implications with your supervisor or experienced delegated laboratory worker.
- Undergraduate students are not permitted to work after hours unless there is appropriate approval and supervision.
<table>
<thead>
<tr>
<th>Week</th>
<th>Week Commencing</th>
<th>Lecture 1</th>
<th>Lecture 2</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29/02/2016</td>
<td>Intro &amp; Hist. Perspective</td>
<td>Cytology 1</td>
<td>Microscopy – Light and Electron Microscope Reading Assignment and EM Research Project</td>
</tr>
<tr>
<td>2</td>
<td>07/03/2016</td>
<td>Cytology 2</td>
<td>Light Microscopy</td>
<td>Microscopy – Cells &amp; Organelles (Reading assignment to be completed)</td>
</tr>
<tr>
<td>3</td>
<td>14/03/2016</td>
<td>Electron (S &amp; T) microscopy</td>
<td>Preparative Techniques</td>
<td>Primary tissues 1: Epithelia</td>
</tr>
<tr>
<td>4</td>
<td>21/03/2016</td>
<td>Epithelium</td>
<td>Connective (Loose, dense and adipose)</td>
<td>Primary tissues 2: Connective tissues (Virtual – Microscope)</td>
</tr>
<tr>
<td>5</td>
<td>28/03/2016</td>
<td>Connective (Cartilage and bone)</td>
<td>Connective (blood and lymph)</td>
<td>Primary tissues 2: Connective tissue (Microscopes) (EM research project to be completed)</td>
</tr>
<tr>
<td>6</td>
<td>04/04/2016</td>
<td>Nervous</td>
<td>Nervous</td>
<td>Primary tissues 3 &amp; 4: Muscle &amp; Nerves – Vascular system (Virtual - Microscopes)</td>
</tr>
<tr>
<td>7</td>
<td>11/04/2016</td>
<td>CNS</td>
<td>Muscle (Skeletal, Cardiac and Smooth)</td>
<td>Primary tissues 3 &amp; 4: Muscle &amp; Nerves – Vascular system (Microscopes)</td>
</tr>
<tr>
<td>8</td>
<td>18/04/2016</td>
<td>Circulation and Cardiovascular</td>
<td>Lymphatics and Immune</td>
<td>Systems 1: Immune, Integument &amp; Respiratory (Virt-Mic)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid Session recess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>02/05/2016</td>
<td>Integumentary</td>
<td>Respiratory</td>
<td>Systems 1: Immune, Integument &amp; Respiratory (Micros.)</td>
</tr>
<tr>
<td>10</td>
<td>09/05/2016</td>
<td>Digestion: Upper</td>
<td>Digestion: Lower</td>
<td>Systems 2: Gastro. Urinary + Accessory Organs (Virt-Mic)</td>
</tr>
<tr>
<td>11</td>
<td>16/05/2016</td>
<td>Digestion: Accessory</td>
<td>Urinary 1</td>
<td>Systems 2: Gastro. Urinary + Accessory Organs (Micro)</td>
</tr>
<tr>
<td>12</td>
<td>23/05/2016</td>
<td>Urinary 2</td>
<td>Endocrine 1</td>
<td>System 3: Endocrine and Reproductive (Vir-Mic)</td>
</tr>
<tr>
<td>13</td>
<td>30/05/2016</td>
<td>Male Reproductive</td>
<td>Female Reproductive</td>
<td>Practical Exam</td>
</tr>
</tbody>
</table>

*The above timetable should be used as a guide only, as it is subject to change. Students will be advised of any changes as they become known.*
Section B: Assessment

Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Form of Assessment</th>
<th>Due Date</th>
<th>Return/Feedback Due date</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment 1</td>
<td>Practical Testing (variable) Assessments</td>
<td>TBA</td>
<td>in class</td>
<td>20%</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>Practical Exam</td>
<td>Week 13</td>
<td>Within 2 days of completion</td>
<td>30%</td>
</tr>
<tr>
<td>Assessment 3</td>
<td>Theory Exam</td>
<td>During exam period</td>
<td>Release of results</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Total Marks</td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Details of Assessment Tasks

Assessment tasks will be marked using explicit criteria that will be provided to students prior to submission.

Assessment 1

**Practical Testing (variable) Assessments**

<table>
<thead>
<tr>
<th>Due date</th>
<th>TBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>20%</td>
</tr>
<tr>
<td>Submission</td>
<td>Submit a hardcopy of your assessment to your tutor/demonstrator in your prac class</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment</td>
</tr>
<tr>
<td>Length</td>
<td>5-10 minutes</td>
</tr>
</tbody>
</table>

**Details**

Occur at start of most prac sessions

There will be between 5-6 practical session items used to form this assessment. Items may vary but can include marking of the answer sheets e.g. light microscope and/or electron microscope work sheet, marking of the in lab prac work in practical books, marking of the Virtual Microscope answer sheets, or small spot tests derived from either source completed in the previous week. These tests will be random and it is the responsibility of each student to be prepared and to keep their prac work up to date and to be prepared for a test on the previous weeks material throughout the period of the practical sessions.

<table>
<thead>
<tr>
<th>Subject Learning Outcomes</th>
<th>1-4</th>
</tr>
</thead>
</table>

**Marking Criteria**

Assessment 1 will be marked using the following criteria: Correct answers to precise questions

Assessment 2

**Practical Exam**

<table>
<thead>
<tr>
<th>Due date</th>
<th>During timetabled prac period in Week 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>30%</td>
</tr>
<tr>
<td>Submission</td>
<td>Submit a hardcopy of your assessment to your tutor/demonstrator in your prac class</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment</td>
</tr>
<tr>
<td>Length</td>
<td>~50 mins</td>
</tr>
</tbody>
</table>

**Details**

Involves identification of structures, cell and tissue types of relevance to the study of histology

<table>
<thead>
<tr>
<th>Subject Learning Outcomes</th>
<th>1-4</th>
</tr>
</thead>
</table>

**Marking Criteria**

Assessment 2 will be marked using the following criteria: Correct answers to precise questions (eg identification of cellular structures and cell types)
### Assessment 3

<table>
<thead>
<tr>
<th>Due date</th>
<th>During exam period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting</td>
<td>50%</td>
</tr>
<tr>
<td>Submission</td>
<td>Exam papers and answers must be submitted at the conclusion of the exam.</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment</td>
</tr>
<tr>
<td>Length</td>
<td>3 hrs</td>
</tr>
<tr>
<td>Details</td>
<td>Normal major exam conditions apply</td>
</tr>
<tr>
<td>Style and Format</td>
<td>Includes multiple choice, short answers, label identification of diagrams and one long answer question — based on the lecture material</td>
</tr>
<tr>
<td>Subject Learning Outcomes</td>
<td>1-4</td>
</tr>
<tr>
<td>Marking Criteria</td>
<td>Assessment 3 will be marked using the following criteria: Correct answers to precise questions (e.g. identification of cellular structures and cell types)</td>
</tr>
</tbody>
</table>

### Minimum Requirements for a Pass in this Subject

To receive a clear pass in this subject a total mark of 50% or more must be achieved. In addition, failure to meet any of the minimum performance requirements is grounds for awarding a Technical Fail (TF) in the subject, even where total marks accumulated are greater than 50%.

The minimum performance requirements for this subject are:

- attempt all assessment tasks
- obtain 50% or more in each major assessment item (30% practical, 20% practical exam and 50% theory exam)

### Minimum Student Attendance and Participation

It is expected that students will allocate 12 hours per week to this subject, including any required class attendance, completion of prescribed readings and assessment tasks.

Student attendance at practicals is compulsory and students must attend 100% of classes. Absences will require the submission of an application for Academic Consideration via SOLS and the presentation of suitable documentation, for example a Medical Certificate, to Student Central as soon as practical. For further details about applying for academic consideration visit the Student Central webpage: [http://www.uow.edu.au/student/central/academicconsideration/index.html](http://www.uow.edu.au/student/central/academicconsideration/index.html)

### Scaling

Scaling may be used in this subject (by a combination of methods dependent upon circumstances pertaining to the result in any one year e.g. addition/subtraction, percentage adjustment or piecewise linear scaling). Any adjustment will normally be very minor (e.g. <2% of final mark).

### Late Submission

Late submission of an assessment task without an approved extension of the deadline is not acceptable. If you are unable to submit an assessment due to extenuating circumstances (e.g. medical grounds or compassionate grounds), you can make an application of academic consideration. Not all circumstances qualify for academic consideration. For further details about applying for academic consideration visit the Student Central webpage: [http://www.uow.edu.au/student/central/academicconsideration/index.html](http://www.uow.edu.au/student/central/academicconsideration/index.html)

### Late Submission Penalty

Marks will be deducted for late submission at the rate of 5% of the total possible marks for that particular assessment task per day. This means that if a piece of work is marked out of 100, then the late penalty will be 5 marks per day (5% of 100 possible marks per day). The formula for calculating
the late penalty is: the total possible marks x 0.05 x number of days late. For the purposes of this 
policy a weekend (Saturday and Sunday) will be regarded as two days.

For example:

- Student A submits an assessment which is marked out of 100. The assessment is submitted 
  7 days late. This means that a late penalty of 35 marks will apply (100 x 0.05 x 7). The 
  assessment is marked as per normal out of 100 and is given a mark of 85/100, and then the late 
  penalty is applied. The result is that the student receives a final mark of 50/100 for the 
  assessment (85 (original mark) – 35 marks (late penalty) = 50/100 (final mark)).

- Student B submits a report which is marked out of 20. The report is submitted three days late. 
  This means that a late penalty of 3 marks will apply ((20 x 0.05 x 3). The report is marked as 
  per normal out of 20 and is given a mark of 17/20, and then the late penalty is applied. The 
  result is that the student receives a final mark of 14/20 for the report (17 (original mark) – 3 
  marks (late penalty) = 14/20 (final mark)).

No marks will be awarded for work submitted either after the assessment has been returned to the 
students or more than two weeks after the due date, whichever is the sooner. This does not apply to 
situations where a particular assessment task is undertaken by students at different times throughout 
the session, but where the assessment is based on experiments or case studies specific to a student. 
In this case no marks will be awarded for work submitted more than two weeks after the due date.

Notwithstanding this, students must complete all assessment tasks to a satisfactory standard and 
submit them, regardless of lateness or loss of marks, where submission is a condition of satisfactorily 
completing the subject.

Supplementary Assessments

Supplementary assessment may be offered to students whose performance in this subject is close to 
that required to pass the subject, and are otherwise identified as meriting an offer of a supplementary 
assessment. The precise form of supplementary assessment will be determined at the time the offer 
of a supplementary assessment is made.

Students can log on to SOLS and click on the link titled "Supplementary Assessment" to view any 
applicable offers or use the following 

System of Referencing Used for Written Work

The Author-Date (Harvard) referencing system should, unless otherwise specified for a particular 
assessment (check Details of Assessment Tasks), be utilised. A summary of the Harvard system can 

Use of Internet Sources

Students are able to use the Internet to access the most current information on relevant topics and 
information. Internet sources should only be used after careful critical analysis of the currency of the 
information, the role and standing of the sponsoring institution, reputation and credentials of the 
author, the clarity of the information and the extent to which the information can be supported or 
ratified by other authoritative sources.

Plagiarism

The full policy on Academic Integrity and Plagiarism is found in the Policy Directory on the UOW 
website.

"The University's Academic Integrity and Plagiarism Policy, Faculty Handbooks and subject guides 
clearly set out the University's expectation that students submit only their own original work for 
assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work
(either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as ‘resources’), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the university to be intentionally or recklessly helping other students to cheat. This is considered academic misconduct and students place themselves at risk of being expelled from the University."

**Submission of Assessments**

Refer to the submission requirements under the details of the individual assessments. Students should ensure that they receive a receipt/evidence acknowledging assessment submission. Students will be required to produce this in the event that an assessment task is considered to be lost. Students are also expected to keep a copy of all their submitted assignments in the event that re-submission is required.

**Assessment Return**

Contact your lecturer/tutor/subject coordinator if you would like feedback on your assessment. In accordance with University Policy marked assessments will usually only be held for 21 days after the declaration of marks for that assessment.
Section C: General Advice

Students should refer to the Faculty of Science, Medicine and Health website for information on policies, learning and support services and other general advice.

University Policies

Students should be familiar with the following University policies:

a. Code of Practice – Teaching and Assessment

b. Code of Practice – Research, where relevant

c. Code of Practice – Honours, where relevant

d. Student Charter

e. Code of Practice – Student Professional Experience, where relevant

f. Academic Integrity and Plagiarism Policy

g. Student Academic Consideration Policy

h. Course Progress Policy

i. Graduate Qualities Policy

j. Academic Complaints Policy (Coursework and Honours Students)

k. Policy and Guidelines on Non-Discriminatory Language Practice and Presentation

l. Workplace Health and Safety, where relevant

m. Intellectual Property Policy

n. IP Student Assessment of Intellectual Property Policy, where relevant

o. Policy on Ethical Objection by Students to the Use of Animal and Animal Products in Coursework Subjects, where relevant

p. Human Research Ethics Guidelines, where relevant

q. Animal Research Guidelines, where relevant
r. Student Conduct Rules and accompanying Procedures or Research Misconduct Policy for research students

Student Support Services and Facilities
Students can access information on student support services and facilities at the following link. This includes information on “Academic Support”, “Starting at University, “Help at University” as well as information and support on “Career’s and Jobs”. http://www.uow.edu.au/student/services/index.html

Student Etiquette
Guidelines on the use of email to contact teaching staff, mobile phone use in class and information on the university guide to eLearning ‘Netiquette’ can be found at http://www.uow.edu.au/student/elearning/netiquette/index.html

Version Control Table

<table>
<thead>
<tr>
<th>Version Control</th>
<th>Release Date</th>
<th>Author/Reviewer</th>
<th>Approved By</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20152112</td>
<td>Prof Paul Else – Subject Coordinator</td>
<td>Sonia Losinno - ADE Nominee</td>
<td>Final MEDI210 Autumn 2016 Subject Outline</td>
</tr>
</tbody>
</table>