

**COURSE OUTLINE
BIOMEDICAL HISTOLOGY (BIOM 4070)
FALL SEMESTER, 2010**

Instructors: Course co-ordinator: Dr. Ann Hahnel
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Lectures: Room ROZH 103

Tuesday 11:30 -12:50

Thursday 11:30 -12:50

Histology Drop-In Centre: Room 1682 OVC

Times: 1:30-4:30 M-F

Office hours: Since instructors will be available during drop in lab sessions, there are no other official office hours. Appointments can be made to address individual concerns by e-mail.

Course Objectives

To understand and recognize at the light and electron microscope level how cells are organized into tissues and tissues into organs and organ systems.

To learn to extrapolate from 2-dimensional sections to the 3-dimensional structure.

To relate microscopic morphology to cell/tissue/organ function.

To relate histology to other areas of biology.

To appreciate the effects of tissue preparation on tissue morphology.

To appreciate the use of histological knowledge and techniques in medicine and research in the biomedical sciences.

Subjects Covered

Basic cell cytology.

Various types of lining and glandular epithelia, connective tissues, muscle tissue, nervous tissue, and blood and immune system cells.

Organization of these basic cell and tissue types into the lymphoid organs, circulatory system, urinary system, skin, respiratory system, gastrointestinal system, and glands.

Selected histological techniques and the kinds of information that they impart.

Approach

There are 2 lectures per week (1.5 hrs each): They will highlight important points of tissue or organ organization, deal with functional correlation, integrate with other biological disciplines and discuss injuries or diseases that affect the histological organization under study. In the first lecture on each topic, approximately ½ hour will be devoted to introducing students to the laboratory material for that week ('lab talk'). There is not time in the lectures to discuss all information that a student is required to know. The assigned readings in the text book and laboratory manual complement the lectures and fill in information.

The '**laboratory**' does not occur in a special room or at a particular time, but is **computer based independent study**. Each week slides in a virtual slide collection are assigned and what you need to know is described in the laboratory manual. The slides are hosted by a special server on an external WEB site, but can be accessed by any computer with an internet connection. Access is described on D2L and in the lab manual. These slides are accompanied by electron micrographs that can be found on the course D2L site. The lab manual will be your initial guide through this process. **We encourage group work**. Similar to viewing a slide through a microscope, virtual slides contain the whole of a tissue section, and allow you to change power of magnification and search throughout the slide. But because the image is projected onto a monitor rather than into eye pieces, several people can easily view, and confer on the material in each slide. This is not dissimilar to modern

research microscopes that are controlled by a computer and project their image onto a computer screen.

While there is no formal lab, there is a drop-in centre where students obtain individual or group help with the material. The **'drop in centre' (room 1682 OVC)** will be open **every afternoon from 1:30-4:30** with an instructor or TA on site. Quizzes will be posted for each week's lab on D2L and are taken on D2L. To encourage you to keep up with the material, students who complete a quiz by Monday 5 PM the week after the lab, and earn 50% or higher, will be earn 0.5 % toward the final grade. (With 10 graded quizzes over the course, 5% of the final grade will be from the quizzes.) The quiz format is identical to what you will see in the mid-term and final exams (just fewer questions), and provides you with a means to assess your understanding of the material and identify areas in which you need help. So please take the quizzes seriously, and take them alone, even if you work in a group. **It is your responsibility to manage your time, and it is your responsibility to get the help that you need.** A little extra effort in the first half of the course toward learning to identify cells and tissues will make your life easier in the second half. Procrastination will make your life more difficult.

Textbook and Resource Materials

Required Texts: Histology: A text and atlas by M.H. Ross and W. Pawlina. 5th ed., 2005. Assigned readings are given in the Laboratory Guide.

Biomedical Histology Laboratory Guide by the Histology faculty, 2010. Can be purchased in the Book Store. The manual will also be provided on D2L, but it is difficult to read the manual and view the slides if you have a typical one monitor system.

On D2L: Lab folders containing electron micrographs (TEM, SEM) and other demonstration light micrographs.

Copies of the power-point presentations from lectures.

On Objective Pathology WEB site:

Library of virtual slides. Access will be described on D2L and in the lab manual.

On Reserve in OVC Learning Commons:

Atlas of Histology by Dongmei Cui, 1st ed. 2011 – a new atlas that is well annotated with the essentials and is an excellently help with the material in the lab.

Evaluation Methods

Midterm Exam: 37.5% of final grade (Split equally between Theory& Lab)

October 19 – Theory exam – taken in lecture room during lecture time.
October 19-22 – Lab exams – **will be taken in the lab period you were assigned during registration. Room 2500 OVC.**

There will be 1 mid-term exam, with 2 parts: The theory exam will consist of 1 sentence to 1 paragraph answers or an annotated diagram. For the lab exam, you will be presented with 15-25 images on the computer (light micrographs from the virtual slide collection or EM images). The format and type of questions will be the same as in the quizzes. The **midterm will cover the first 5 labs and associated material from the text and lectures:** cytology, epithelia, fibrous connective tissue and adipose, muscle, nerve, blood and cardiovascular system.

Final Exam: 57.5% of final grade (Split equally between Theory & Lab 30%)

Monday December 6
Theory 8:30-10:30 AM
Lab – one of 2 times the same day – see below.

Theory Exam – 2 hr: There is only 1 final exam time given on the University WEB site for technical reasons. This is when you will take the theory final exam.

Lab Exam – 90 min: The lab exam will also be taken the same day as the theory exam. After 40th class day, you will be able to sign up on D2L for either a 11:30 AM or 1:30 PM time slot..

The format for both final exams will be the same as for the midterm.

The final exam is by nature comprehensive, because the study of organs requires and builds on knowledge of tissue/cell organization. However, the emphasis will be on the major organs and organ systems which are covered after the midterm.

10 Laboratory Quizzes: 5% of final grade

All but the last lab will have a quiz associated with it on D2L. If you attempt the quiz before 5 PM on the Monday following the week that it is assigned (Tuesday after Thanksgiving), and have at least 50% of answers correct, you will be given 0.5% toward the final grade. The quiz will be graded by an instructor so that you can see an actual percent grade and judge how well you are doing.

Special information for lab exams:

The lab exams will be given on computers in computer labs. The mid-term will be given in OVC 2500. Since these computers are part of the OVC network, you need to 'synchronize' your password with this system from some other computer prior to taking the exam as follows:

Go to <https://www.uoguelph.ca/ccs/apps/password/change/>

You do not have to change your normal log-in password, but do need to enter it 3 times. This will set your CFS password and will allow you to use the student computers in OVC.

Policy on Missed Exams and Assignments

If the mid-term or part of a mid-term is missed, the student is required to provide a reasonable explanation to the course co-ordinator (A. Hahnel). Illness and family crisis are valid excuses, because they cannot be anticipated. But e.g. other exams and work schedules are not valid, because you can plan ahead. **If you miss the midterm exam, it is your responsibility to make contact with the course coordinator by Monday of the following week.** There will be 1 make-up exam, and it will be given end of the week after the regular mid-term. **There will be no 100% final exams except in special circumstances and by request of a program counsellor.**

If the final exam is missed, application for a deferred condition (and not a deferred exam) must be made through a program counsellor and The Office of the Registrar as outlined in the Academic Consideration and Appeals section of the Undergraduate Calendar. **Make-up of the final exam will take place during the 2nd week of winter term. It is the student's responsibility to contact Dr. Hahnel no later than Friday of the first week of winter term to schedule the make-up exam.** There will not be another exam given during the deferred exam period in February. The format will be the same as for the scheduled final exam.

Other Information

Students will be asked to complete a questionnaire on instructors' teaching competence on line. This is part of information required by the University to evaluate faculty performance for purposes of Tenure, Promotion and Selective Increases. The information is supplied to the chair of the instructor's home department, and the evaluations will be delivered to the respective instructors only after the final grades have been submitted to the Registrar's Office.

The University of Guelph takes a very serious view of Academic Misconduct. Included in this category are such activities as cheating on examinations, plagiarism, misrepresentation, and submitting the same material in two different courses without written permission. Students are expected to be familiar with the section on Academic Misconduct in the Undergraduate Calendar and should be aware that expulsion from the University is a possible penalty.

SCHEDULE - BIOM HISTOLOGY
Fall 2010

Lec #	Date	Lecture Topic	Lab Topic
1	Sept 09	Introduction & Cytology	
2	14	Epithelia	1) Cytology
3	16	Epithelia	
4	21	Fibrous Connective Tissue	2) Epithelia
5	23	CT Cells, Adipose Tissue	
6	28	Muscle	3) Fibrous Connective Tissue
7	30	Nerve	
8	Oct 05	Cardiovascular System & Blood	4) Muscle & Nerve
9	07	Cardiovascular System & Blood	
10	12	Cartilage & Bone	5) Cardiovascular system & Blood
11	14	Cartilage & Bone	
12	19	<u>Theory Midterm Exam</u>	<u>Lab Midterm Exams</u>
13	21	Lymphoid System	
14	26	Lymphoid System	6) Cartilage & Bone
15	28	Gastrointestinal Tract	
16	Nov 02	Gastrointestinal Tract	7) Lymphoid System
17	04	Liver & Pancreas	
18	09	Respiratory System	8) Gastrointestinal Tract
19	11	Urinary System	
20	16	Urinary System	9) Liver & Respiratory System
21	18	Endocrine System	
22	23	Endocrine System	10) Urinary System
23	25	Integument	
24	30	Catch-up & Review	11) Integument & Endocrine System
25	02	Monday schedule – no lecture	

Assigned text readings are on the first page of each lab in the lab guide. Required depth is exemplified by lectures and questions in the lab manual.

Final Exams are on Monday December 6: theory exam – 8:30 – 10:30 AM; lab exam - you will sign up for either 11:30-1:00 or 1:30-3:00 time slot after 40th class day.