Course Goals and Objectives

My goal in this course is to help you to understand the basics of histology and cell structure. This will be accomplished through lecture material and lab work. I want you to come to learn how the cells composing an animal are organized into tissues, tissues into organs, and organs into systems, and to understand the relationship between structure and function. I want you also to know about the structure of the cells of which the various tissues are composed, and to become familiar with electron micrographs to help you accomplish this. To achieve all of this means that you will need to become experts in the use of the light microscope. Success in this course will also require you to sharpen your deductive reasoning skills in applying principles you learn about cytological and histological features. This is much better than simple memorization of facts, and will enable you to transfer what you learn about organs we are able to cover in this course to those we will not have a chance to study.

The syllabus includes the lecture topic for each class. You are responsible for all the relevant textbook material for each topic we cover. My expectation is that you will spend a couple of hours preparing for each class, reviewing notes and reading the text.

Much of your real learning will occur in the lab as you examine for yourselves selected histological preparations of tissues. This kind of learning is a very active process. It involves the integration of material from lectures and reading, recalling material from other courses, review of previous labs, consultation with your lab manual and classmates, etc. You will not do well in (or enjoy) our lab sessions each week if you have not reviewed the notes and readings of the relevant lectures to prepare for lab.

Most of the laboratory exercises, in addition to the list of slides in your collection which you need to examine and study, will include one or more “Demonstration Slides” (set up on microscopes) or micrographs in the back of the lab. The description in your Lab Notebook describes the details you should look for, and will tell you if it is a tissue you should scan, or if it has been set up with the pointer on a particular feature. In the latter case, moving the slide will confuse the students who look at the demonstration after you and will earn you the fierce displeasure of your professor. Don’t do it!

Texts
2. Histology and Cytology Lab Notebook Fall 2012. This notebook is designed to encourage note-taking in the lab. Each lab chapter page is printed on only one side to provide you with a blank sheet opposite each page of my own commentary, which you should feel free to fill with any drawings or notes of your own on the slides you examine.
**Grading**

There will be 3 hour exams on the lecture and reading material (60% of the final grade), and 3 lab exams (40% of final grade).

Students are responsible for all text materials which supplement the lectures and labs. Attendance is important: missing class will inevitably lower your exam scores. Missed labs must be made up. If an exam date is inconvenient, it can be changed only by consensus. If something prevents you from being able to take an exam on the assigned date, the missed exam material will be included in a comprehensive final exam. A second missed exam cannot be made up.

Final grades will be calculated according to the following:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>100-93</td>
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<tr>
<td>A-</td>
<td>92-90</td>
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<tr>
<td>B+</td>
<td>89-87</td>
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<tr>
<td>B</td>
<td>86-83</td>
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<tr>
<td>B-</td>
<td>82-80</td>
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<td>C+</td>
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<td>D-</td>
<td>62-60</td>
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<tr>
<td>F</td>
<td>&lt;60</td>
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**Academic Integrity**

Collaboration with your classmates is encouraged in the lab, but will not be tolerated during exams. Any lack of academic honesty makes an exam completely unacceptable, meriting a grade of 0%. 

**Resources**
An additional aid for your review of your labwork (which was considered very helpful by my students in the last few years) available in lab is the computer-based image display and tutorial program called “MedPics”. It is no substitute for looking at the tissues themselves, but will undoubtedly help you to ensure that you have identified the key features of your slides. You will find your own best way of using this aid. See Lab 2 for an introduction to this program.

Besides your slide collections and the “MedPics” program on the lab’s computers (both available in the lab), you can access the micrograph collection of many university and medical school histology programs on the “Net”. Some of them include their own lab practical exercises. Check out these addresses, and see if you can hunt up some more:

http://www.meddean.luc.edu/lumen/MedEd/Histo/frames/histo_frames.html
http://education.vetmed.vt.edu/Curriculum/VM8054/Labs/labtoc.htm
http://www.path.uiowa.edu/virtualslidebox/histo_path/histology_laboratory/
http://www.kumc.edu/instruction/medicine/anatomy/histoweb/
http://pathology.mc.duke.edu/research/PTH225.html
http://www.courseweb.uottawa.ca/medicine-histology/Default_Eng.htm

Some of these sites have absolutely fantastic collections of micrographs of tissues we examine in our lab exercises, and will be invaluable as you review for our lab exams.

Finally, we have our own Histology software available for your use on College computers. You will be able to access it from the “Start Programs” menu. Click on “Biology” and then on “Histology.”
Lecture Schedule

September
5. Introduction
7. The Cell I
10. The Cell II
12. The Cell III
14. Epithelium I
17. Epithelium II
19. Glands I
21. Glands II
24. Methods of Study
26. Connective Tissue I
28. Connective Tissue II

October
1. Cartilage
3. Bone
5. Bone Formation
9. Blood
10. Lymphoid and Myeloid
12. LAB EXAM I (Labs 1-4)
15. Vascular System
17. Muscle I
19. EXAM I

12. LAB EXAM I (Labs 1-4)
15. Vascular System
17. Muscle I
19. EXAM I

November
2. Respiratory System I
5. Respiratory System II
7. Digestive System I
9. LAB EXAM II (Labs 5-8)
12. Digestive System II
14. EXAM II
16. Digestive System III
19. Digestive System IV
26. Urinary Tract I
28. Urinary Tract II
30. Female Reproductive System I

December
3. Female Reproductive System II
5. Male Reproductive System
7. EXAM III
14. LAB EXAM III (8:30 – 10:30)
(Labs 9-12)
# LABORATORY SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Sept. 10</td>
<td>Lab 1</td>
<td>Introduction; Use of the Microscope; The Cell</td>
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<tr>
<td>Sept. 17</td>
<td>Lab 2</td>
<td>Epithelium</td>
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<td>Sept. 24</td>
<td>Lab 3</td>
<td>Glands</td>
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<td>Oct. 1</td>
<td>Field Trip</td>
<td>Pawtucket Memorial Hospital Histology Lab</td>
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<td>Oct. 9 (Tuesday)</td>
<td>Lab 4</td>
<td>Connective Tissue Proper</td>
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<td>Oct. 15</td>
<td>Lab 5</td>
<td>Connective Tissue II: Cartilage and Bone</td>
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<td>Oct. 22</td>
<td>Lab 6</td>
<td>Connective Tissue III: Blood &amp; Blood Formation</td>
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<tr>
<td>Oct. 29</td>
<td>Lab 7</td>
<td>Lymphoid Tissue and Muscle</td>
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<tr>
<td>Nov. 5</td>
<td>Lab 8</td>
<td>Nerves and Sense Organs</td>
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<tr>
<td>Nov. 12</td>
<td>Lab 9</td>
<td>Skin and Respiratory System</td>
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<tr>
<td>Nov. 19</td>
<td>Lab 10</td>
<td>Digestive System I</td>
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<td>Nov. 26</td>
<td>Lab 11</td>
<td>Digestive System II and Urinary Tract</td>
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<tr>
<td>Dec. 3</td>
<td>Lab 12</td>
<td>Male and Female Reproductive Systems</td>
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