BIOLOGY 352, Spring 2015

Vertebrate Histology

Texts: Color Text Book of Histology by Gartner & Hiatt. (Recommended)
Color Atlas of Histology by Gartner & Hiatt. (Required)

Blackboard: Most course information for this class is on Blackboard. Log in using your ISU Net-ID (your ISU email address without the @iastate.edu) and password. Enter this class to go to our course Homepage. On Bb, you will be able to view this syllabus and laboratory syllabus, lectures' handouts, review questions, weekly laboratory material, your grades and announcements.

Course Goal: This course will present histology from a functional perspective; it will help students to learn and enhances their knowledge of the micro-structure of tissues and organs. The course focuses about the ultra-structure, function and clinical significance of the four tissue types; and different body organs and systems.

Approaches

- Lectures; presented topics with quizzes and histological pictures
- Review questions and study guide
- Students' projects; case presentation identifying the clinical correlation and underscore the practical relevance of the material.
- Integrated laboratory; examine histological slides identifying microscopic structure of normal tissues and organs.
- Pathology reports; examine pathological slides comparing normal and abnormal structures of the organs.
- Mini-lab tests; reviewing microscopic structures and functions.

Lectures: Lectures are available on Bb. You may review these lectures as many times as you wish, you could print and bring them at the lectures times, take notes and add points while listening to the lectures; reminding you with the key ideas.

Pop-up Quizzes: Interspersed in the lectures are multiple-choice questions that will allow you to review the material as you listen to the lecture. Each question is equivalent 1 point and will be added toward the total earned points and your final grade. Maximum earning clicker points are 60. There is no make up for any missed clicker questions. These questions are part of the questions bank used for your exams, and you might see these questions again. Therefore it would be prudent to attend and participate in lectures' activities.

Clickers: Clickers (Turning Point Student Response System) will be used for grading pop up questions. Starting the second day of class, they will be used in lectures. Follow the instructions and link for clicker registration on our Bb homepage so you are ready to go on the second day of class. When you arrive, click GO -> 41 -> GO. The green light means you are ready to answer questions. If the green light doesn't appear, repeat the GO -> 41 -> GO. It is your responsibility to learn to operate the simple clicker system and to bring them in class every scheduled class day.

Review Questions/Study Guide: Review questions for each topic are posted on Bb and used as study guide for exams.

Students' Projects: By the end of the semester, all students must be involved in case presentation project. This project includes 15 to 20 minutes in-class presentation of a clinical disease that is associated with destruction of normal histological feature of a particular tissue. Presentation must be associated with submission of a white paper of two pages length, double spaced. Project's points are equal to one exam (100 points). All students in the class are required to attend the students' presentations, as these clinical cases will be part of your final exam as well.
The schedule of the presentations may vary depending on the number of students enrolled in the class. You

may involve in this project in a team of 2 or 3 students depending on the class size. It is your responsibility to choose a partner/s to work with. The total earned points for a submitted project will be given to all students participate in this project. Groups and chosen topics should be submitted before spring break. Date and topic of the presentation will be assigned based on first come first serve criteria. Your instructor should receive a hard copy of the white paper and an electronic copy of the power point presentation (PPP), two working days before the expected day of presentation. PPP should be loaded into Bb blog. 5 points will be deducted for late submission of project's requirements. Further details on how to choose and present cases will be illustrated during the semester. Credible information sources include all peer-reviewed literature (Google Scholar), NEJM, .nih, and most .edu sites. Most .net, .org, and .com sites are suspected and should be discussed with the instructor before use. Remember, most but not all .gov sites are credible.

Exams: There will be three lecture exams and a final. Each lecture exam will be worth 100 points and includes the material that has been covered. The final exam is cumulative and include all the material covered in this course, the final exam will worth 140 points. Exams are multiple-choice or T/F questions. It is assumed that you know the information on lecture materials, review questions before you take each exam. The deadline for completing each exam will be posted and announced at Bb. It is your responsibility to keep track of the announced deadlines; you will not be allowed to take the exam after the announced deadline. Exams will be taken in the Testing Facility in 60 Carver/Gilman Halls. You must have your red ISU card to take them. These computer labs are usually open M-F 8AM to 4PM.

Exam Schedule

Exam	Estimated Exam Date
Exam 1	Feb. 09
Exam 2	Mar. 04
Exam 3	Apr. 06
Final Exam	May 07 As scheduled

Laboratory Work: Laboratory Attending is **Mandatory** for success in this course. 40% of your grade comes from the laboratory works. You could visit Blackboard and look at the laboratory syllabus for more details about laboratory work and grades.

Course Grading: 60% of your grade comes from lecture work. Lab work is equal 40% of your grades. Grades are based upon the percentage of total possible points earned. Percentages will be rounded to whole numbers for grade assignment using the following grading scale:

A 93-100%	A- 90-92%	
B+ 87-89%	B 83-86%	B- 80-82%
C+ 77-79%	C 73-76%	C- 70-72%
D+ 67-69%	D 63-66%	D- 60-62%
F 0-59%		

Keep a record of your points earned to compare with my records you can view in the "My Grades" section of Bb. If there is an error or your points have not been recorded, notify me within one week so the error can be corrected. After one week, all scores posted on Bb are final.

Source of Points	**Points Possible**
Lectures	
Pop-up Quizzes	60
Presentation and paper	100
Lecture Exam I	100
Lecture Exam II	100
Lecture Exam III	100
Final Exam	140
Total earning points	**600**

Laboratory Work	
Quizzes	100
Midterm lab practical	60
Final lab practical	90
Drawing pictures	120
Pathology reports	20
Total earning points	**390**

Biology 352, HISTOLOGY, Spring 2015 - Course Schedule

Day	Date	Lecture Topic	Lab #	Lab Topic	Text
Mon	Jan. 12	Introduction			
Wed	Jan. 14	Cytoplasm		NO LAB	Ch. 2
Fri	Jan. 16	Nucleus			Ch. 3
Mon	Jan. 19	**University Holiday**			
Wed	Jan. 21	Epithelium & Glands	1	Cytology & Epithelia	Ch. 5
Fri.	Jan. 23	Connective Tissue/Extracellular Matrix			Ch. 4/6
Mon	Jan. 26	Connective Tissue/Extracellular Matrix			Ch. 4/6
Wed	Jan. 28	Cartilage and Bone	2	Glands &	Ch. 7
Fri	Jan. 30	Muscle		Connective tissue	Ch. 8
Mon	Feb. 02	Muscle/Nervous Tissue			Ch. 8/9
Wed	Feb. 04	Nervous Tissue	3	***Mini-test***	Ch. 9
Fri	Feb. 06	Nervous Tissue		Skeleton & Muscle	Ch. 9
Mon	Feb. 09	**Exam 1 (Through Muscle)**			Ch. 9
Wed	Feb. 11	Blood & Hemopoiesis	4	Nervous System	Ch. 10
Fri	Feb. 13	Blood & Hemopoiesis			Ch. 10
Mon	Feb. 16	Circulatory System		***Mini-test***	Ch. 11
Wed	Feb. 18	Circulatory System	5	Hemopoiesis&	Ch. 11
Fri	Feb. 20	Lymphoid/Immune System		Circulatory	Ch. 12
Mon	Feb. 23	Immune System/Integument			Ch. 12/14
Wed	Feb. 25	Integument	6	Lymphoid &	Ch. 14
Fri	Feb. 27	Endocrine System		Integument	Ch. 13
Mon	Mar. 02	Endocrine System		***Mini-test***	Ch. 13
Wed	Mar. 04	**Exam 2 (Through Integument)**	7	Endocrine	Ch. 13
Fri	Mar. 06	Endocrine/Respiratory System			Ch.13/15
Mon	Mar. 09	Respiratory System			Ch. 15
Wed	Mar. 11	GI/ Oral Cavity	8	**Lab exam** - 60 points	Ch. 16
Fri	Mar. 13	GI/Alimentary Canal			Ch. 17
☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺ ☺☺		**SPRING BREAK**	☹☹☹☹☹☹☹☹☹☹☹☹	☹☹☹☹☹	
Mon	Mar. 23	GI/Alimentary Canal			Ch. 17
Wed	Mar. 25	Digestive System/Glands	9	Respiratory&	Ch. 17/18
Fri	Mar. 27	Digestive Glands		Oral Cavity	Ch. 18
Mon	Mar. 30	Urinary System		***Mini-test***	Ch. 19
Wed	Apr. 01	Urinary System	10	GI Tract &	Ch. 19
Fri	Apr. 03	Reproductive system-female		Digestive Glands	Ch. 20
Mon	Apr. 06	**Exam 3 (Through Digestive Glands)**			Ch. 20
Wed	Apr. 08	Reproductive system-female	11	Urinary &	Ch. 20
Fri	Apr. 10	**No Class**		Female reproductive	Ch. 20
Mon	Apr. 13	Reproductive system-female/male		***Mini-test***	Ch. 21
Wed	Apr. 15	Reproductive system-male	12	Male reproductive	Ch. 21
Fri	Apr. 17	Eye			Ch. 22
Mon	Apr. 20	Ear			Ch. 22
Wed	Apr. 22	Students' case presentation	13	Eye, Ear	
Fri	Apr. 24	Students' case presentations			
Mon	Apr. 27	Students' case presentations			
Wed	Apr. 29	Students' case presentations	14	**Lab final** - 90 pts.	
Fri	May 01	Students' case presentation			
May 07		**Final Exam As Scheduled**	☹☹☹☹☹☹☹☹☹☹☹☹☹☹☹		

Mini-tests are as listed.

Biology 352 Histology Lab

Laboratory Requirements: Weekly Blackboard laboratory notes as well as Color Atlas of Histology by L. P. Gartner and J. L. Hiatt is required for this course. Figures in this atlas are referenced in the weekly laboratory notes.

Purpose of the Lab: The lab is an opportunity to obtain concrete experience in identifying the tissues, organs, and microscopic structures discussed in the lecture. At the beginning of the instructions for each lab exercise there will be a section labeled Purpose. This will summarize the objectives of that lab, including specific structures which students should be able to recognize after completing that lab.

Laboratory Procedure: You will be working in groups. For 2 students, histological slides boxes will be assigned during the first lab. You will be responsible for the care of these slides. If there are any damaged or missing slides notify your instructor so the discrepancy can be noted and replacements found. The cost of slides varies from approximately $3 to $10 each. Slide boxes may not be taken from the lab.

You will examine these histological slides during the course, in addition to others. Specific slides may be used in each lab and will be mentioned at the beginning of each laboratory instruction as well as on Bb weekly laboratory materials. Because there are some differences between slides, it is a good idea to swap slides with your neighbors and examine several examples of each specimen. Each slide has a box number on it. Be sure that the proper slides get back into the right box.

Lab Drawings: Students will be expected to prepare several sketches in their lab notes for most of the lab exercises. The structures to be drawn are indicated in the lab instructions. The purpose of these drawings is not to demonstrate your artistic ability, but to assist you in developing your powers of observation. ("Whoever does not draw does not observe." Leonardo da Vinci). You should find this experience useful in solidifying your concepts of relationships between structures. Begin by sketching an outline of the microscope field. Then sketch in the areas of special interest. Finally, fill in the cellular detail. Draw with a hard lead pencil, concentrating on a small area at a time. Note the relative sizes of various objects when planning the overall drawing. Color is not required, but it may be helpful. Label important structures on the drawing. Use your lab atlas to help identify objects. When the drawings are graded, it will depend on completeness, accuracy and gross errors. Your finesse in drawing will not be considered, but accuracy will be important.

Pathological reports: For each table; 50 pathological slides boxes will be assigned. You will be asked to examin pathological slides. Each working group (2 students) has to submit a report describing what you have observed at the pathological slides, comparing the difference between the observation noticed at pathological slides and the normal slides of the same organ. Pathology reports equal 20 points, extra gaining points is considered as extra-credit.

Laboratory Classroom Rules: Regular attendance at lab is mandatory for success in the course. Your instructor will give you helpful information about the materials each lab, and in a number of labs you will work with materials not available at other times. If you have 2 or more unexcused absences, you will automatically fail this lab and, as a consequence, you lose 40% of your final grades. If you must miss a lab due to illness or a university-sponsored activity, discuss this with your instructor as soon as possible.
Eating, drinking, smoking or similar activities are not permitted in the lab for safety and health (as well as aesthetic) reasons.
If you need to use the restroom or leave the lab for any reason, you may do so without asking permission, EXCEPT during your instructor's introduction to the lab.

Grades in the Lab: The work done in the lab will constitute 40% of the grade for Histology course. Grading in the lab will be based on:

1. Mini- tests (Lab Quizzes): every two lab works there is a lab qizzes covering the previous two weeks' laboratory learning materials. Mini-tests will be conducted at the beginning of the lab, so arrive on time. If you arrive late and the class has completed the minitest, you will not be able to take it. Each mini test is worth 20 points. Quizzes' questions will involve identifying structures (cell, tissue, organs) under microscpes and

mentioning their basic functions. The first two/three questions of some quizzed will be identifying structures on projected slides. The quizzes are designed to prepare students for the lab practicals.

2. Lab drawing: These will be collected at the end of each lab, reviewed and graded by TA. It will count 2 points for each drawing picture. If you did not submit your laboratory drawing sheet before leaving the lab, you will loose the corresponding points for this lab drawing and of course will affect your earned total laboratory drawing points.

3. Lab practical exams. There will be two cumulative lab practical exams. The first (midterm) will worth 60 points; the second (final) lab exam will cover all laboratory materials. The final exam will worth 90 points. Exams' questions will be similar to the quizzes including identification of structures on projected and presented microscopic slides and naming their basic function. Other questions will involve the student locating structures on microscopic slides. This last questions will be scored as they are presented to the instructor in the lab. A copy of slide list similar to the one in your slide box will be provided at the time of the exam for this purpose.

Keep a record of all points earned. Keep all graded papers returned to you. These are your proof of earning those points. Check Bb to see that your points are correctly recorded there. If there is an error or your points have not been recorded, notify me within one week so the error can be corrected. After one week, all scores posted on Blackboard Learn are final.

Source of Points	Possible Earned Points
Mini-tests	100
Midterm lab practical	60
Final lab practical	90
Drawing pictures	120
Pathology reports	20
Total points	390

Extra-credit sources: extra-points out of pathology reports are considered as extra-credit sources during the semester.