

Please note that some details of this syllabus (e.g., dates of exams) are subject to change.

Required Textbook: *Histology: A Text and Atlas: w/ Correlated Cell & Molecular Biology*; Ross & Pawlina, 7th Edition, 2016, Lippincott, Williams & Wilkins, ISBN 9781451187427. *Earlier versions of the textbook are acceptable.*

Study Questions: An online list of study questions is provided for each topic area. These questions serve as a guide to the reading and a foundation for studying. These questions provide a foundation to begin your preparation but are not inclusive of all material for which you are responsible nor are they designed to test your critical thinking skills or ability to solve novel problems (both of which will also be assessed during exams, the lab experience and homework exercises).

Reading: The textbook, *Histology: A Text and Atlas*, serves two roles- as a laboratory guide and as a content resource. Some of the reading material is very detailed and beyond that required for the exams. As a result, it is wise to use the book as a resource to supplement the class notes, answer the study questions, and to explore topics in more detail. Scanning the material before the associated class meetings will make the course experience more valuable. Especially note the “Histology 101” reviews at the end of each chapter as well as the useful tables that effectively summarize material.

Assigned reading for each unit is below.

TOPIC	ASSIGNED CHAPTER AND PAGES
Cell Biology Review	Chapter 2: Cell Cytoplasm- scan and review to prepare for quiz Chapter 3: The Cell Nucleus- scan & review to prepare for quiz
Techniques	Chapter 1: Methods, pages 1-21
Epithelial Tissue	Chapter 4 Tissues: Concept & Classification, pages 97-104 Chapter 5: Epithelial Tissue, pages 105-149
Connective Tissue	Chapter 6: Connective Tissue, pages 156-187 Chapter 7: Cartilage, pages 194-205
	Chapter 8: Bone, pages 214-243
	Chapter 9: Adipose Tissue, pages 254-266
Muscle Tissue	Chapter 11: Muscle Tissue, pages 314-343
Nervous Tissue	Chapter 12: Nerve Tissue, pages 356-382 and 385-393
Circulatory System	Chapter 13: Cardiovascular System, right column 411-433
Endocrine System	Chapter 21: Endocrine System, pages 742-777

Urinary System	Chapter 20: Urinary System, pages 698-729
Immune System	Chapter 14: Lymphatic System, pages 442-475
Digestive System and Accessory Organs	Chapter 17: Digestive System II, pages 568-603 Chapter 18: Digestive System III, pages 626-653
Reproductive Systems	Chapters 22 and 23: Male and Female Reproduction

Course Web Page: The Web page for this course is housed on Moodle. The web page contains the course syllabus, review materials including study questions, sample exam questions and answers, pdfs of lecture slides, a list of "free links" to sites of interest, and a link to the laboratory component of the course and the associated Image Galleries.

Laboratory Component of Course: The laboratory component of this course is mandatory and provides you with hands-on experience with microscopy, visual identification of cells, tissues, and organs, immunohistochemistry, and tissue sectioning. In addition to cell and tissue identification exercises (8 weeks), the laboratory includes two semester-long projects.

- IMAGES2018: During the 8 slide-based labs, you will capture, label, and post an image of an assigned cell or tissue structure to this class image gallery.
- Group Project: You will work in a small group of students to investigate the structure and molecular components of a chosen rat organ using lab histological techniques of embedding, sectioning, staining, and immunohistochemistry. You will also relate this organ histology to a disease involving this organ. Your results will be presented orally as a group during class and individually in writing. Details can be found in the laboratory syllabus.

***** REMEMBER TO BRING YOUR TEXTBOOK TO EACH LAB! *****

The first lab is on Tuesday 1/30 or Wednesday 1/31 in 264 ISB.

Grading: A possible 300 points can be earned and are distributed as follows:

Two 1 hour in class exams (55 points each)	110
Final Exam	55
Preparatory Quiz	5
Homework Problems	10
Laboratory Attendance	15
Three Laboratory Practical Exams (25, 15, 15 pts)	55
Contributions to the IMAGESF2018 Gallery	20
Group Oral Project Presentation	10
Individual Written Project Report	20
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	300 TOTAL POINTS

Preparatory Quiz: To be successful in the course, you will need a working knowledge of key concepts in cell biology. You will have an in-class quiz on the material covered in Chapters 2 and 3 of your textbook on **Friday, February 2nd.**

In-Class Hour Examinations: Exam 1: **Wednesday February 21st**
Exam 2: **Wednesday March 28th**

Final Exam: To be given during Finals Week

Lab Practical Exams: Practical Exam 1: **March 6th and 7th**
Practical Exam 2: **April 3rd and 4th**
Practical Exam 3: **April 24th and 25th**

In-class Presentations of Group Projects: **April 25th, April 27th, and April 30th**

Estimated Grade Distribution: Course Letter Grades will be based on the total number of accumulated points.

Accumulated Points out of 300	Accumulated Points as a Percentage (X/300 x 100)	Course Letter Grade
300-278	100-93	A
277-266	92-89	A-
265-254	88-85	B+
253-242	84-81	B
241-230	80-77	B-
229-218	76-73	C+
217-209	72-70	C
208-200	69-67	C-
199-182	66-61	D
181 and below	60 and below	F

Please Note: You may only use the sectioning equipment (cryostat and microtomes) when a supervising Teaching Assistant is present.

Also Note: The imagery created by students in this course is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-sa/3.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California 94041 USA.

Academic Honesty Policy: As scientists, we conduct experiments to test hypotheses. It is imperative that we conduct ourselves with integrity in and outside the field or laboratory so that the presentation of our results is credible. Every student in this class, without exception, will be held to the standards set forth in the University Policy on Academic Honesty. This policy can be downloaded from here:

http://www.umass.edu/dean_students/codeofconduct/acadhonesty/#policy

Briefly, it states: "Since the integrity of the academic enterprise of any institution of higher

education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty.” Appropriate sanctions will be imposed on any student who commits an act of academic dishonesty.

Access: I am committed to providing all students with access to the course. If you have a documented disability, please contact the Disability Services. The university’s nondiscrimination policy can be found at <http://www.umass.edu/eod/aapolicy.html>.

Course Expectations:

You are very experienced college students. However, to ensure that you realize your academic goals in this course, I want to remind you of some practices that have been shown to be effective in achieving success in Biology 523, Histology.

- Attend every class and ask questions to clarify your understanding.
- Attend your laboratory section, complete all assignments, and examine all material.
- Return to the laboratory after hours to review the slide material.
- Read the assigned reading and make connections between the material presented in the readings, in class, and in the lab.
- Participate in in-class problem solving and discussions. Make sure that you understand the reasoning behind the correct answers.
- Review notes and study the material after each lecture.
- Answer all study questions. Confirm that your answers are correct and complete.
- Attend review sessions before exams. Confirm your understanding of concepts and come prepared to ask questions.
- Identify study partners for class and laboratory material and work together to study and answer questions.