

**Histology Syllabus for Spring 2014**  
**BIO 403-A / 5403-Z**  
**Instructor: Angela Whittom Reiken, Ph.D.**  
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**PLEASE CHECK YOUR MC EMAIL AND MOODLE FREQUENTLY**

**Credit: 5 hours**

Lecture: M 1:30-4:30 and TR 8:00-9:15 (MSB 210)

Lab: 403-1/5403-1 T 1:30-4:30; 403-2/5403-2 W 1:30-4:30 (MSB 209)

Prerequisites: Undergraduates- BIO 305

Graduate Students-Enrolled in MS Medical Sciences program.

Graduate Students- If you plan on taking the National Board Subject (Shelf) Exam, then please sign up for Bio 6305, Cell Physiology in addition to Bio 5403 if you have not already completed or registered for this course.

**Textbooks needed:**

*Histology: A Text and Atlas*, 7<sup>th</sup> edition by Ross and Pawlina

*Wheater's Functional Histology*, 5<sup>th</sup> edition, by B. Young et al.

*BRS Cell Biology and Histology*, 6<sup>th</sup> edition by Gartner, Hiatt, and Strum

Optional: *Cells and Tissue Ultrastructure: A Functional Prospective* by P. Cross and K. Mercer

**Catalog Course Description:**

This course is an introduction to normal histology, featuring the study of cells, tissues, and organs. The functional significance of structure is considered. It is a viable elective for undergraduate students seeking a B.S. in Biology-Medical Sciences. It is also a viable elective for graduate students in the Masters of Medical Sciences program.

**Rationale for Course:**

The mission of the College stipulates that courses are to be provided to help students live balanced, satisfying and meaningful lives. A requisite to the preceding is an understanding of basic cellular, tissue and organ system ultrastructure. This course explores the microscopic anatomical features in the context of physiological function. It is hoped that students who complete this course and a major in the biological sciences will ultimately utilize their skills, talents and abilities in service to God and humanity as teachers, professors, physicians, dentists, physical therapists and in other biological related professions. This course clearly meets the core curriculum requirement that students study and learn about the natural world.

**Topics covered:**

Cell Structure

Epithelium

Nervous Tissue

Connective Issue

Skin

Cartilage/Bone

Muscle Respiration

Cardiovascular

Blood Cells

Bone Growth

Lymphatic System

Endocrine

Female Reproductive System

Male Reproductive System

Digestive System

Urinary System

**Learning Objectives:**

This course will examine the ultrastructure of cells, tissue and organ systems in the context of physiological function. Microscopic slides and electron micrographs will be utilized to facilitate the students' understanding of structure and function. At the completion of the course, the student will be able to identify tissue types and their ultrastructural components and articulate the functional significance relative to the whole organism. More specifically the student will be able to demonstrate the following:

1. Identification of ultrastructural components of cells from electron micrographs and their relevance to cell function.
2. Have an understanding of the various types of cellular form and arrangement in epithelial tissue.
3. Be able to differentiate between peripheral and central nervous tissue.
4. Understand the layers of skin and the function of various skin cell types.
5. Identify smooth muscle, cardiac muscle and skeletal muscle and explain the cytoarchitecture of each muscle type.
6. Be able to explain the different types of bone and cartilage as well as their formation.
7. Identify the various blood cell types and histologically differentiate between types of veins and arteries.
8. Explain the function of the lymphatic system and identify lymph nodes and diffuse lymphoid tissue.

9. Demonstrate a detailed functional understanding of all endocrine glands and be able to identify each gland based on ultrastructure.
10. Develop an understanding of the reproduction system and identify all relevant tissues.
11. Identification of major tissue types from the urinary system and a basic understanding of renal physiology.
12. Be able to recognize tissue samples from all levels of the digestive tract and understand the role of exocrine enzymes in nutrient break down and absorption.
13. Students will also relate clinical information to the associated tissue or systems discussed in class.

**Methods of Instruction:** Methods of instruction will include lecture and outside readings. For lab, the student is expected to identify, on microscopic slides and electron micrographs, tissue types and significant cytoarchitectural structures.

Students are required to check MC Moodle (<http://moodle.mc.edu/>) for syllabus information, course documents, assignments and other materials as directed by the instructor. Students will be required to check their MC email and MC Moodle a minimum of 2 times per day, i.e., morning and evening. Students will be responsible for any and all information that has been disseminated via either of these methods.

**Grading Policies:**

1. Every Monday at 1:30 PM, a **comprehensive lecture quiz** will be given with the exception of exam days. I will count your 8 highest lecture quiz grades. If you accumulate more than 8 lecture quizzes with perfect scores, then each additional perfect score will add one point to an exam score. Any quiz missed due to absence or tardiness, **regardless** of the reason will count as a zero. Since a significant number of your quizzes can be dropped, a missed quiz will need to be one of your dropped quizzes. The lecture quiz average will count 5% of your final average.
2. Every Lab Meeting (either Tuesday or Wednesday depending on your lab schedule) at 1:30 PM, a **comprehensive lab quiz** will be given with the exception of exam days. You must take the quiz on **your assigned lab day**. I will count your 8 highest lab quiz grades. If you accumulate more than 8 perfect lab quiz scores, then each additional perfect score will add one point to an exam score. Any quiz missed due to absence or tardiness, **regardless** of the reason will count as a zero. Since a significant number of your quizzes can be dropped, a missed quiz will need to be one of your dropped quizzes. The lab quiz average will count 5% of your final average.

**You are responsible for keeping up with your lecture and lab quiz scores. They will NOT be given to you at various times throughout the semester and quiz grades will not be posted!**

3. **All lecture exams are comprehensive.**
  - a. You are responsible for all of the notes and material we cover in lecture, all reading assignments and all clinical correlations in the Histology text by Ross, Wheater's, and the BRS Cell Biology and Histology books.
  - b. Missing a lecture exam due to an unexcused absence will result in a zero for that exam.
  - c. The format of the lecture exams will be multiple choice.
  - d. Any lecture exam missed due to an excused absence will be made up **ASAP, (within one week of the absence or less)**. **Formats of make-up lecture exams may vary from the original exam.**
  - e. An excused absence is defined as an absence due to personal illness, or death of a relative. *You must have a letter from your physician or other documentation before an excused absence is granted. The students should present such documentation to the professor at the time of the make-up examination.*
4. **All lab exams are comprehensive.**
  - a. You are responsible for all of the lab objectives included in the notes and any material covered during the laboratory portion of the course. Students are expected to attend all lab sessions and study slides outside of scheduled laboratory instruction hours. The lab will be available for this purpose. The lab will not be available for study during examination times.
  - b. The lab exams will be given in the laboratory on the assigned lab meeting days.
  - c. Missing a lab exam due to an unexcused absence will result in a zero for that exam.
  - d. The format of the lab exams will be identification of a tissue or structure from a picture or from a slide placed on the microscope, and writing the correct term in the blank.
  - e. Any lab exam missed due to an excused absence should be scheduled **ASAP, (within one day of returning from the absence)**. **Formats of make-up lab exams may vary from the original exam.**
  - f. An excused absence is defined as an absence due to personal illness, or death of a

relative. *You must have a letter from your physician or other documentation before an excused absence is granted. The students should present such documentation to the professor at the time of the make-up examination.*

5. **Scholarly research and/or review publications:** Graduate students taking Histology (BIO 5403) will take a scientific article exam based on two to three assigned scholarly research and/or review publications related to the course material. Undergraduate students taking Histology (BIO 403) will take a scientific article exam based on one assigned scholarly research and/or review publication related to the course material.
- You will answer a multiple choice exam covering the assigned paper(s).
  - The required articles will be posted on Moodle.
  - The article exam will count 10% of the final course grade.

6. **Grades:**

**Grading scale for 403:**

A: 85.0 - 100%  
B: 75.0 - 84.9%  
C: 65.0 - 74.9%  
D: 60.0 - 64.9%  
F: 59.9 % and Below

**Grading scale for 5403:**

A: 85.0 - 100%  
B+: 80.0 - 84.9%  
B: 75.0 - 79.9%  
C+: 70.0 - 74.9%  
C: 65.0 - 69.9%  
D: 60.0 - 64.9%  
F: 59.9 % and Below

7. **Percentages for Final Grade**

Exam I..... 7.5%  
Exam II..... 12.5%  
Exam III ..... 22.5%  
Exam IV ..... 37.5%  
Lecture Quiz Average ..... 5.0%  
Lab Quiz Average ..... 5.0%  
Scholarly Papers Exam..... 10.0%

Note: For each exam, the lecture portion is 50% of the grade and the lab portion is 50% of the grade. You MUST attend your scheduled section in order to take the exams. You may not change sections in order to take the exam on another day.

8. The National Board of Medical Examiner's Histology and Cell Biology Board Exam will be given **at the end of the semester (date to be announced)**. The first exam will be given at 8:00 AM. Only students who are taking two Shelf exams can take one of the exams at 1 PM that same day. If you score 500 or greater on the Histology and Cell Biology Board Exam, your grade will be raised by one letter grade. Example, C to B; C+ to B+; B+ to A.

**Attendance:**

Strict adherence to Mississippi College's class attendance policy will be followed. Any student whose absences, whether excused or unexcused, exceed 25% of the class meetings will receive a grade of "F" in the course. See the *Graduate and Undergraduate Handbook and Catalog*.

**Note: What counts as an "excused absence" is solely the judgment of the professor. Typically an excused absence is defined as an absence due to personal illness, or death of a relative. You must have a letter from your physician before an excused absence is granted if you miss due to illness.**

**Morning lecture starts at 8:00 AM. The afternoon lecture starts at 1:30. Students are expected to be in their seats at that time. Excessive tardiness will result in loss of points.**

**All students are expected to attend their assigned lab section on their assigned day for the entirety of the lab period.**

**When attending, only WATER in a CLEAR CONTAINER is allowed. Drink in any other form is NOT allowed in the classroom. FOOD is NOT allowed in the classroom. Students violating this rule are considered NOT READY (TARDY) for class and will be asked to leave the room to correct the situation. NO CONTAINERS ARE ALLOWED ON DESKS DURING QUIZZES AND EXAMS.**

**Academic Integrity Statement:**

Mississippi College students should display academic integrity in all situations. Honesty is expected from all

students at all times. Dishonesty, such as cheating, plagiarism, and falsifying information, is a serious offense and is subject to severe penalty. You are not to have your cell phone or other electronic device out during an exam. If the electronic device is out, that will constitute cheating. Adherence to the Mississippi College "Honesty Policy" (Mississippi College Undergraduate Bulletin) will be followed.

**Cell phones are not allowed out in the classroom after class begins. They are to be kept in your book bag, purse or pocket. They are not allowed on the desk or in your lap. Before class begins, turn cell phones OFF.**

**Audio recording of lectures is permitted. Video recording is NOT permitted at any time. Taking photos with cell phones or other devices is also NOT permitted.**

**Recording of any type (video, audio or photos) during the review of quizzes and exams is NOT permitted. During exams, touching a cell phone after an exam is passed out will result in loss of points on the exam.**

**Failure to turn off recording devices during such times is considered cheating and will result in an F on the exam and possible disciplinary procedures for cheating.**

**During exams, a proctor has the right to move any student to another seat.**

**During lecture and lab exams, communicating with other students in any form is not permitted. Students should make all efforts to keep their exams answers shielded from the view of others.**

**During lab exams, students are expected to keep their answer sheets folded, opening them only to record answers. Only one student will be allowed at a time at a microscope station. Students are only permitted to make fine focus adjustments during lab exams. Questions on lab exams will be timed. When asked to do so, students will immediately rotate to the next station. Second views will not be permitted.**

**Students who are auditing the course are NOT allowed to take the exam and are not allowed to be present during the review of an exam.**

**Rules for exams apply equally to both lecture and lab quizzes.**

**Students will take tests and quizzes with non-mechanical #2 pencils only. Students are responsible for bringing an appropriate pencil to class for taking quizzes and tests. DURING QUIZZES AND TESTS, gloves/caps/hoods/hats/coats will be removed, book bags and purses will be closed, and NOTHING EXCEPT THE STUDENT'S TEST/QUIZ MATERIALS AND PENCIL IS ALLOWED ON THE DESK. Book bags will be placed in a designated area during exams and may be retrieved by students as each turns in the exam and exits the room.**

**Reviewing exams (lecture and lab):**

**Recording, either video or audio, or the taking of pictures during the review of quizzes and exams is NOT permitted. Violation of will be considered a violation of our honor code and will go onto your permanent record. This may result in expulsion from the course or program. This violation will be reported to any graduate or professional school for which you apply.**

**Touching a cell phone or other electronic devices other than a calculator that was provided to you is NOT permitted. During the review of exams, students are not allowed to have anything on the desk except their bubble answer sheet, exam, and approved writing device. Taking notes during the review is NOT permitted. Recording the information in any way (writing, video, photos, scanning, audio recording, etc.) is NOT allowed.**

**Students are given ONE opportunity to review an exam they have previously completed. If a student is absent on the day of the review, the student forfeits the opportunity to review the exam.**

**In one of the lectures following an exam (the date will be announced), students will be given the answer sheet only. The questions will be reviewed by a PowerPoint or similar presentation. Students must return the answer sheet following the review. Failure to return the answer sheet or writing or recording information will result in a zero on the exam and students may be reported as having cheated on the exam. Students will not have the opportunity to review the exam at a later date. Final exams are not reviewed.**

**Violation of this will be considered a violation of our honor code and will go onto your permanent record. This may result in expulsion from the course or program. This violation will be reported to any graduate or professional school for which you apply.**

**THE INSTRUCTOR RESERVES THE RIGHT TO ALTER THIS SYLLABUS. THIS MAY INCLUDE CHANGING EXAM DATES.**

**NOTICE: IF NEEDED, 7 AM TUESDAY OR THURSDAY, EXTENDED MONDAY AFTERNOON, OR SATURDAY LECTURES MAY BE HELD.**

**Planned Schedule:**

<b>Week of...</b>	<b>Topics and Important Dates</b>
1-13 to 1-17	<b>First lecture class meeting is Monday, January 13</b> <b>Lab meetings begin this week</b> Topics: Syllabus, Cell Structure, Epithelium
1-20 to 1-24	<b>Martin Luther King Holiday- no class- Monday, January 20</b> <b>Tuesday, January 21-last day to enroll or add a full semester class</b> <b>Thursday, January 23-last day to drop a class- 100% tuition refund</b> Topics: Epithelium, Nervous Tissue, Nerves
1-27 to 1-31	Topics: Nerves, Connective Tissue, Skin
2-03 to 2-07	<b>Science and Math Tournament- no class- Thursday, February 6</b> Topics: Skin, Cartilage and Bone, Bone Growth
2-10 to 2-14	<b>Exam I: through Skin</b> <b>Lecture Exam I- Monday, February 10 at 1:30</b> <b>Lab Exam I- Tuesday or Wednesday February 11 or 12 at 1:30</b> Topics: Bone Growth, Muscle, Respiration
2-17 to 2-21	Topics: Respiration, Cardiovascular, Blood
2-24 to 2-28	Topics: Blood, Lymphatics, Endocrine
3-03 to 3-07	<b>Exam II: through Lymphatics</b> <b>Lecture Exam II- Monday, March 3 at 1:30</b> <b>Lab Exam II- Tuesday or Wednesday March 4 or 5 at 1:30</b> Topics: Endocrine
3-10 to 3-14	<b>Spring Break- no class</b>
3-17 to 3-21	Topics: Endocrine <b>March 21- last day to drop a class -zero tuition refund</b>
3-24 to 3-28	Topics: Endocrine, Female Reproductive System
3-31 to 4-04	Topics: Female Reproductive System, Male Reproductive System, Digestive System
4-07 to 4-11	<b>Exam III: through Male Reproductive</b> <b>Lecture Exam III, Monday, April 7 at 1:30</b> <b>Lab Exam III- Tuesday or Wednesday April 8 or 9 at 1:30</b> Topics: Digestive System
4-14 to 4-18	Topics: Digestive System, Urinary System
4-21 to 4-25	<b>Easter Holiday- April 21, Monday</b> Topics: Urinary System
4-28 to 5-02	<b>Lab Exam IV (Final): through Urinary- Tuesday or Wednesday, April 29-30 at 1:30</b> <b>Study Day- May 1, Thursday</b> Topics: Urinary System
5-07	<b>Lecture Exam IV (Final): through Urinary- Monday, May 5 from 12:00 - 3:00</b>
(Day and Time TBA)	<b>Scholarly Article Exam</b>
(Day and Time TBA)	Histology and Cell Biology Board Exam <b>8:00 AM</b> . Only students taking 2 Shelf exams can take one at 1 PM the same day.

**Important college dates:**

January 20, Monday: Martin Luther King Holiday, No Day or Night Classes; Offices Closed  
January 21, Tuesday, 5pm: Last Day To Enroll or Add A Full Semester Class  
January 23, Thursday: Last Day To Drop a Full Semester Class with 100% Tuition Only Refund  
March 10-16, Monday through Sunday: Spring Break  
March 21, Friday: LAST DAY TO DROP A FULL SEMESTER CLASS (No Tuition Refund)  
April 21, Monday: Easter Holiday - Offices Closed (No day classes; night classes will meet)  
April 28-30, Monday-Wednesday: Dead Days (April 30, Wednesday: Last day of classes; night exams begin)  
May 1, Thursday: Study Day  
May 2- May 7, Friday, Saturday, Monday, Tuesday, Wednesday: Final exams

**Special accommodations at Student Counseling Services:**

In order for a student to receive disability accommodations under Section 504 of the Americans with Disabilities Act, he or she must schedule an individual meeting with the Director of Student Counseling Services **immediately upon recognition of their disability** (if their disability is known they must come in before the semester begins or make an appointment **immediately** upon receipt of their syllabi for the new semester). The student must bring with them written documentation from a medical physician and/or licensed clinician that verifies their disability. If the student has received prior accommodations, they must bring written documentation of those accommodations (example Individualized Education Plan from the school system). Documentation must be current (**within 3 years**). The student must meet with SCS **face-to face** and also attend two (2) additional follow up meetings (one mid semester before or after midterm examinations and the last one at the end of the semester). Please note that the student may also schedule additional meetings as needed for support through SCS as they work with their professor throughout the semester. Note: Students must come in **each semester** to complete their Individualized Accommodation Plan (example: MC student completes fall semester IAP plan and even if student is a continuing student for the spring semester they must come in again to complete their spring semester IAP plan).

Student Counseling Services is located in Alumni Hall Room #4 or they may be contacted via email at: [mbryant@mc.edu](mailto:mbryant@mc.edu) or [rward@mc.edu](mailto:rward@mc.edu) or by phone at [601-925-7791](tel:601-925-7791).

**Early Alert System:**

Mississippi College has adopted the practice of finding students early in the semester who may be exhibiting behaviors that could ultimately have a negative impact on their academic progress. These behaviors are often called “red flag” behaviors and include, but are not limited to, excessive absences, poor test grades, and lack of class participation or evidence of non-engagement. Identifying these behaviors early gives the instructor the opportunity to raise the “red flag” on behalf of a particular student so that the student can take the appropriate action to redirect his/her progress. The system alerts the student, the student’s advisor, and the Office of Student Success. These messages are intended to help a student recognize an area of concern and to encourage him/her to make some choices to improve the situation. When a student receives an Early Alert message, the student should quickly make an appointment to talk with his/her professor about the situation. Also, students can make full use of the Office of Student Success to set academic goals and connect to campus resources.

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**Each student is expected to keep a copy of this syllabus and revised updates of the syllabus and schedule which will be posted on Moodle for reference.**  
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**Each student is expected to print a copy of this syllabus, print his/her name, sign the statement below, and turn in the entire signed copy to the instructor no later than Tuesday, January 21, 2014:**

I \_\_\_\_\_ have read and had explained all of the information and policies outlined in this syllabus. I understand that as a student, that by signing this acknowledgement, I am required to adhere to the policies outlined in this syllabus during the period of my enrollment in this course. If at anytime I feel that I have not been treated in accordance with these policies, I have the right as a student to first meet with the instructor to rectify this problem. If the problem is not rectified, I or the instructor may refer to the department chair.

Course Name: \_\_\_\_\_

Course Number and Section: \_\_\_\_\_

Student Name (print or type clearly): \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date of Signature: \_\_\_\_\_