



Florida State University
College of Medicine

BMS 6110-C

Histology and Cell Biology

Fall 2014

Table of Contents

Instructors	2
Course Director	2
Assistant Course Director	2
Faculty	2
Course Overview.....	3
Competencies	5
Policies.....	6
Americans with Disabilities Act	6
Academic Honor Code	6
Attendance Policy.....	7
Required Materials	7
Suggested Materials.....	7
Available Resources.....	7
Suggested Textbook.....	7
e-Book Resources: Not for testing	7
Grading	8
Assignments and Grading	8

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Course Overview

This syllabus is intended to be a current guide to the activities and grading of this course. The schedule may change during the semester and will be reflected on the course Blackboard site. Please check your Blackboard announcements regularly.

The primary goal of Histology and Cell Biology [BMS 6110C] is to establish a foundation of knowledge that will allow the student to relate detailed cellular and molecular alterations to overall disease processes. The course will provide a solid foundation in histology and cell biology with respect to modern medicine and will introduce students to the cellular mechanisms of disease processes. All major tissue groups will be covered. The course will include an introduction to current techniques in molecular medicine as they are used to make clinical diagnoses. Student-directed problem solving skills will be promoted in both large and small group settings. Students will apply both these skills and their knowledge from this course to learning pathophysiologic and biochemical principles in future courses in the curriculum.

Course Goals

Broad Educational Goals

Provide the foundational knowledge of histology and cell biology that is needed for understanding the human body at the tissue and cellular levels and the cellular mechanisms related to normal function, disease, and therapeutic strategies.

Objectives

1. Knowledge

- a. Describe the structure and function of the healthy human body at the cellular and molecular levels.
- b. Recognize the implications of altered microscopic structure seen in various clinical problems.
- c. Describe cellular aspects and mechanisms of disease based on an understanding of how normal cell and molecular biology has been altered.
- d. Identify resources (faculty, print and electronic) that support continued learning about the applications of knowledge in the field of histology and cell biology as it relates to clinical problems.

2. Skills

- a. Evaluate medical problems and formulate hypotheses related to histology and cellular biology in making diagnostic and treatment decisions.
- b. Demonstrate the ability to use histology and cell biology concepts and apply them to clinical reasoning.
- c. Describe the use of molecular medicine techniques in the diagnosis of select clinical diseases.
- d. Develop a basic understanding of how translational research is conducted.

3. Attitudes and behaviors

- a. Demonstrate professionalism and high ethical standards while participating in all course activities and assessments.
- b. Demonstrate effective teamwork in the small group learning exercises.
- c. Show the ability to professionally evaluate your peers based on performance and participation in small group learning sessions of the course.

Course Format

Lectures: Reading assignments will be posted prior to each week on Blackboard. Students will be responsible for reading the text and atlas assignments ahead of time. The lectures are meant to introduce major concepts, explain difficult concepts and relate the content to clinical applications with regard to cellular and molecular biology. Normal histology will be covered in detail with an introduction to pathology at the microscopic level. **The majority of the items on each of the three block examinations will come from material discussed in lectures.**

Clinical Cases in Small Groups: This course will incorporate small group case-based sessions to apply course-related concepts to clinical problems. There will be 5 small group sessions that are 1 hour in length. Under the guidance of student and faculty facilitators, students will discuss one or more clinical cases in each session. Student facilitators assigned for the week will be *required* to attend a preview session of the case the day before the small group session. From the information provided, students will attempt to apply their histological and cell biological knowledge to understand the clinical scenario. Students will work together to identify problems and develop a hypothesis list to explain the clinical problem, then use various resources to address learning issues needed to move forward in the case. These activities will further emphasize the relevance of histology and cell biology to clinical practice. Each case will conclude with a review of the objectives and analysis of two NBME-style questions. Answers to questions posed within the small group cases will be posted on the Blackboard site (in ‘Course Materials’ for that week) immediately following the session. **Approximately 10% of the Histology and Cell Biology items on each of the three block examinations will be from material covered exclusively in small group sessions.**

Quizzes and Exams

A formative quiz of ~8-10 practice questions will be available on Blackboard (under ‘Course Materials’ for the week). Completion of the quizzes is required, however your scores do not contribute to the final course average. You will have 15 minutes to complete the quiz, which should be taken at 4 PM at the beginning of each Small Group session. Consistent with the FSU COM Honor Code, you must complete the quiz without assistance from any source. Only in this way will you have a reasonable self-assessment of your understanding of current material. Once all students have taken the quiz, the answers will be released. You are encouraged to follow up with classmates and/or faculty for anything you do not understand. Quizzes are likely to include image-based questions.

There will be three integrated block examinations and the NBME subject examination in Histology and Cell Biology. Questions on the block exams will be multiple choice (one best answer). They will emphasize material covered in the interval prior to the exam, but will also include cumulative questions. **A significant number of questions will require the student to identify structures on microscope images.** The NBME exam covers all course content. Students should take notice of the “Major Concepts” section on the Blackboard site (under ‘Course Materials’ for the week) when reviewing for each of the exams. **Approximately 10% of the Histology and Cell Biology items on each of the three block examinations will come from material in the assigned text but not covered in the lecture setting.** The text Molecular Biology and Cellular Pathology (Crocker, available on the Library course page) is especially useful as a reference for learning objectives in the area of molecular medicine.

One week prior to the final exam there will be a “Review of Microscopic Slides” and a Tutorial session.

Competencies

FSUCOM – Competencies - Course Title BMS 6110C		
Competency Domains	Specific Objectives	Methods of Assessment
Patient Care		
Medical Knowledge	<p>Evaluate medical problems and formulate hypotheses related to histology and cell biology.</p> <p>Demonstrate the ability to apply histology and cell biology concepts in clinical reasoning.</p> <p>Describe the use of molecular medicine techniques for diagnosing select clinical diseases.</p> <p>Describe the normal cell structure and function associated with each of the major systems of the body.</p> <p>Recognize the consequences of altered cell structure and molecular biology seen in common clinical problems.</p> <p>Demonstrate a basic knowledge of normal and abnormal human histology as seen on microscope-based slides.</p> <p>Identify common types of histopathology and give the underlying mechanisms that led to the pathology in each of the major systems of the body.</p>	Quizzes, Block exams and NBME subject exam, small group exercises
Practice-based Learning		
Communication Skills	<p>Demonstrate an ability to identify and utilize a variety of resources to find information related to normal tissue function and clinical disease.</p> <p>Demonstrate successful group process that is professional and intellectually engaging.</p>	Peer evaluation; observation by course director and faculty.

Professionalism	Demonstrate professionalism and high ethical standards while participating in all course activities and examinations.	Observation by course director and faculty
System-based Practice		
NOTES:		

Policies

Americans with Disabilities Act

Candidates for the M.D. degree must be able to fully and promptly perform the essential functions in each of the following categories: Observation, Communication, Motor, Intellectual, and Behavioral/Social. However, it is recognized that degrees of ability vary widely between individuals. Individuals are encouraged to discuss their disabilities with the College of Medicine's [Director of Student Counseling Services](#) and the FSU Student Disability Resource Center to determine whether they might be eligible to receive accommodations needed in order to train and function effectively as a physician. The Florida State University College of Medicine is committed to enabling its students by any reasonable means or accommodations to complete the course of study leading to the medical degree.

[The Office of Student Counseling Services](#)
 Medical Science Research Building
 G146
 Phone: (850) 645-8256 Fax: (850) 645-9452

This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center
 97 Woodward Avenue, South
 Florida State University
 Tallahassee, FL 32306-4167
 Voice: (850) 644-9566
 TDD: (850) 644-8504
sdrc@admin.fsu.edu
<http://www.fsu.edu/~staffair/dean/StudentDisability>

Academic Honor Code

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. (Florida State University [Academic Honor Policy](#))

Attendance Policy

The College of Medicine has detailed attendance policies as they relate to each cohort and events that conflict with course schedules. See the [FSUCOM Student Handbook](#) for details of attendance policy, notice of absences and remediation.

Unexcused absence from a scheduled examination or quiz may result in a score of zero (0 %) being assigned for that assessment. Unexcused absence from an activity for which attendance is required (for example, Small Group session) may be considered as an issue of Professionalism. Any unexcused absence may require completion of the Performance Improvement Program (see Grading System, below)

Required Materials

1) Histology A Text and Atlas, 6th edition, Ross MH and Pawlina W, 2011, Lippincott, Williams and Wilkins

2) Wheater's Functional Histology: A Text and Color Atlas, 5th edition, Young B, 2006, Elsevier

Suggested Materials

Available Resources

The college of medicine has a variety of textbooks and digital texts on the Histology and Cell Biology course page of the library web site. The area of Molecular Medicine is particularly well covered in Molecular Biology and Cellular Pathology (John Crocker).

Suggested Textbook

Netter's Essential Histology, 1st edition, Ovalle and Nahirney

e-Book Resources: Not for testing

- 1) Junqueira's Basic Histology, 13th ed., Mescher
- 2) Internet Atlas of Histology, Kokko-Cunningham
- 3) Histology Image Review, Wilson
- 4) Molecular Biology of the Cell, Alberts
- 5) Molecular Cell Biology, Lodish
- 6) Color Atlas of Cytology, Kuehnel
- 7) Color Atlas of Pathology, Riede
- 8) Molecular Biology and Cellular Pathology, Crocker
- 9) Cell Biology/A Short Course, 3rd ed., Bolsover

More detail on these resources may be found on the Blackboard site under 'Course Library' and entitled MicroSources where you will also find suggested sites for histology image review.

Grading

Assignments and Grading

FSU COM Class of 2018

FSU COM has adopted a pass/fail grading system which is used in the curriculum for the first and second years (See the [Student Handbook](#)). To achieve a grade of Pass in BMS 6110C a student must meet ALL of the following requirements:

- 1) A passing grade on the NBME subject exam, as determined by the Course Director.
- 2) Attendance and satisfactory participation in all required sessions, as determined by the Course Director. Unexcused absence from an activity for which attendance is required (for example, small group jigsaw session) may result in a Report of Concern for Unprofessionalism Behavior. Repeated unexcused absences may result in receiving a grade of Fail for the course.
- 3) Satisfactory completion of all Pre-class Preparation Assignments, as determined by the Course Director. Pre-class Preparation Assignments are formative (i.e., do not contribute to the final grade) but must be completed on time and with evidence of reasonable effort.
- 4) Satisfactory completion of all additional required assignments, as determined by the Course Director.
- 5) Demonstration of the attitudes and behaviors of Medical Professionalism in all aspects of the course.
- 6) Final average of 70% on all examinations and graded quizzes. (Formative quizzes do not contribute to your final average.) An average below 70% will receive a grade of fail which will require remediation or repetition of the course, as determined by decision of the Student Evaluation and Promotion Committee. A student whose performance is below 70% on any exam in the semester is required to:
 - Attend the exam review
 - Contact the course director within 24 hours of attending the review.
 - Meet with the course director who may require you to engage in and complete a Performance Improvement Program. The purpose of this program is to assist the student in developing the skills and habits necessary to succeed in the curriculum as well as to address specific performance deficits.

BRIDGE Students

Grades will be based on written exams (three internal block exams and the NBME subject examination). Students will be assigned a letter grade (A, B+, B, C+, C, D or F) according to the scale below. Note, that while the minimal passing score for the course is 70%, students in the BRIDGE program must achieve a grade of B or better ($\geq 80\%$) in all required courses to remain in the program.

Grading Scheme for BRIDGE Students: Histology and Cell Biology

- A = $> 90\%$
- B+= 87 – 89.9%
- B = 80 – 86.9%
- C+= 77 – 79.9%
- C = 70 – 76.9%
- D = 65 – 69.9%
- F = $< 64.9\%$

Component percentages for the course (BRIDGE students only):

Block exam average (exams I, II, & III) will contribute 80% to the final score. The NBME subject examination will contribute 20% to the final score. Students should be aware that the NBME examination WILL include items that they are not prepared to answer. The Course Director is aware of this and takes that into account when determining the passing score. Block examinations and the NBME shelf exam will use multiple-choice

one best answer questions. Keep in mind that a significant percentage of the questions on these examinations will require the student to identify structures on microscope images.

Remediation Policy for Students Who Fail a Course

Remediation of a failed course will be planned and implemented by a combined decision of the Student Evaluation and Promotion Committee in collaboration with the course director.