



The Florida State University
College of Medicine

BMS 6110C

Clinical Microanatomy

Fall 2012

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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 can change during the course and will be reflected on the course Blackboard site. Please check your Blackboard announcements regularly.

This course will provide a solid foundation in microanatomy and cell biology with relation to clinical presentation and will introduce students to the cellular mechanisms of disease processes. The course will offer an introduction to current techniques in Molecular Medicine and how these techniques are used to make clinical diagnoses. All major tissue groups will be covered in the course. The course will promote student-directed problem solving skills in lecture (large group), laboratory (team-based learning) and small group settings. Students will apply their knowledge from this course to learning pathophysiologic and biochemical principles in courses delivered later in the FSU COM curriculum. The primary goal of this course is to establish a foundation of knowledge that will allow the student to relate detailed molecular alterations to overall disease processes.

Course Goals

Broad Educational Goals

Provide a comprehensive educational experience in clinical microanatomy that can be integrated into other courses in the medical curriculum.

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 microanatomy as it relates to clinical problems.

2. Skills

- a. Evaluate medical problems and formulate hypotheses related to microscopic anatomy in making diagnostic and treatment decisions.
- b. Demonstrate the ability to use microscopic anatomy and cell biology concepts and apply them to clinical reasoning.
- c. Demonstrate the ability to use Molecular Medicine techniques for diagnosing select clinical diseases.
- d. Develop an understanding of how to conduct translational research

3. Attitudes and behaviors

- a. Demonstrate professionalism and high ethical standard while participating in the course activities and examinations
- b. Participate equally to other members of their group in the team-based learning laboratories
- c. Show an ability to professionally evaluate their peers based on performance and participation in small group and team-based learning sessions of the course.

Learning Objectives

Students will be able to:

- 1) demonstrate a measurable knowledge of normal and abnormal human microanatomy as seen on microscope-based slides from team-based learning laboratory and lecture exercises.
- 2) describe the normal cell structure and function associated with each of the major systems of the body covered in the course content.
- 3) demonstrate an ability to identify histopathology and give the underlying mechanisms that led to the pathology in each of the major systems of the body covered in the course content.
- 4) discuss Molecular Medicine techniques and explain how they are used to diagnose clinical disease.
- 5) carry out successful group process that is professional and intellectually engaging when performing activities in small group and team-based learning sessions.
- 6) demonstrate an ability to utilize a variety of resources (faculty, textbooks, e-books, student consult, other university slideboxes (See resources under MicroSources, week 01 of Course materials), Bacus weblides) to find information about microanatomical issues related to normal function and clinical disease

Course Format

Lectures: The lectures are meant to introduce major concepts, explain difficult concepts and relate the content to clinical applications in regard to cellular and molecular biology. Normal histology will be covered in detail with an introduction to pathology at the microscopic level. Approximately **65% of the Microanatomy items on each of the three block examinations will come from material discussed in lecture.**

Clinical Cases in Small Groups: This course will incorporate small group case-based sessions to apply microanatomical concepts to clinical diagnoses. 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 clinical case in each session. Student facilitators 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 microanatomical knowledge to understanding the clinical problem. Students will identify problems and develop a hypothesis list for the cause of the clinical problem. Students will use various technology to identify learning issues needed to move forward in the case. These activities will further emphasize the

relevance of microanatomy to clinical practice and will prepare students for the process of daily medical education they will need to be successful physicians in the future. 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 Microanatomy items each of the three block examinations will be from material covered in small group sessions.**

Microanatomy Laboratory: There is a separate outline on Blackboard for this component of the course which is entitled 'Laboratory Design' and can be found in the Syllabus tab. These sessions will be delivered in a team-based learning format and make use of the Bacus webslide program (virtual microscopy). The primary focus will be to identify major structures at the microscopic level for each of the major body systems and compare normal histology to pathology. **Approximately 15% of the Microanatomy items on each of the three block examinations will be from material covered in the laboratories.**

Self-Study

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. Five practice exam questions will be posted weekly (Wednesday evening) on the Blackboard site (under 'Course Materials' for the week). **10% of the Microanatomy items on each of the three block examinations will come from material in the text or from supplementary handouts not covered in the lecture setting (e.g., assigned peer-reviewed journal article readings).**

Available Resources

The college of medicine has a variety of textbooks and digital texts on the library web site. Special emphasis in using these resources should be placed on acquiring knowledge in the area of Molecular Medicine (Molecular Biology and Cellular Pathology, John Crocker).

Test Preparation

Along with lecture reviews every other Friday, there will be test question tutorials prior to each of the three block examinations; these sessions are optional. There will also be a final one hour 'Course Review' before the final exam. 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. Furthermore, students should review and develop their own test questions based on the objectives given at the start of each of the lecture power point presentations. **The course director will assign each of the examination questions to a power point objective. A list of these examination question assignments will be given to the students at the beginning of examination week.** Any questions or concerns should be sent to the Course Director's e-mail address.

Team-Based Learning Laboratory (TBLL):

Laboratory will be held in a large group session in room 1200 and be facilitated by Drs. VanLandingham and Blackmon

Each student will be a member of a group of 4-5 other students. You will bring your laptop computers and connect with the imaging database (Clinical Microanatomy Laboratory) on the Florida State College of Medicine website (Medical Library). The lab exercises will be based on the body system of the week and come from FSU COM Bacus Virtual Slidebox. There will be an LCD projection system connected to a networked computer to project images of the lab session to the class as a whole. A typical laboratory session is outlined below:

- 1) Student groups will be assigned 8-10 slides for analysis and testing BEFORE the laboratory. This pre-testing will focus on structural identification and function. One answer sheet will be turned in as a group. The group will find the pre-test and answer sheet in their electronic laboratory manual under the session for the week. The answer sheet must be printed and turned in before the laboratory in hard copy (one answer sheet per group, PLEASE).
- 2) Using virtual microscopy 8 slides of normal histology and two of pathology will be analyzed, compared and discussed by the facilitators during the first 40 minutes of the session. The focus will be on identification of microscopic structures and their mechanisms of action. Teams will be asked questions throughout this portion of the session and required to answer via Turning Point (one answer per group). Students will then be asked to defend their group answer.
- 3) In the remaining 20 minutes of the laboratory session a clinical case will be presented based on a problem concerning the body system of study for that week.

Note: Due to the disruptions of heavy network traffic when using the virtual microscope database only two members of the group will be allowed to open the slidebox during the session.

Competencies

FSUCOM – Competencies -Course Title BMS 6110C		
Competency Domains	Competencies Covered in the Course	Methods of Assessment
Patient Care	X	Internal exams
Medical Knowledge	X	Internal exams and NBME subject exam, TBL formative quizzes
Practice-based Learning		
Communication Skills	X	Peer evaluation within the assigned teams and during course activities.
Professionalism	X	Course Director observation.
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 pages 28-29 of [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: An Introduction to Pathology 2nd edition, Kierszenbaum, LWW
- 2) Wheater's Functional Histology: A Text and Color Atlas 5th edition, Young, Elsevier

Suggested Materials

Available Resources

The college of medicine has a variety of textbooks and digital texts at the library web site. Special emphasis in using these resources should be placed on acquiring knowledge in the area of Molecular Medicine (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) Basic Histology, Junqueira
- 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, 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 microanatomy image review.

Grading

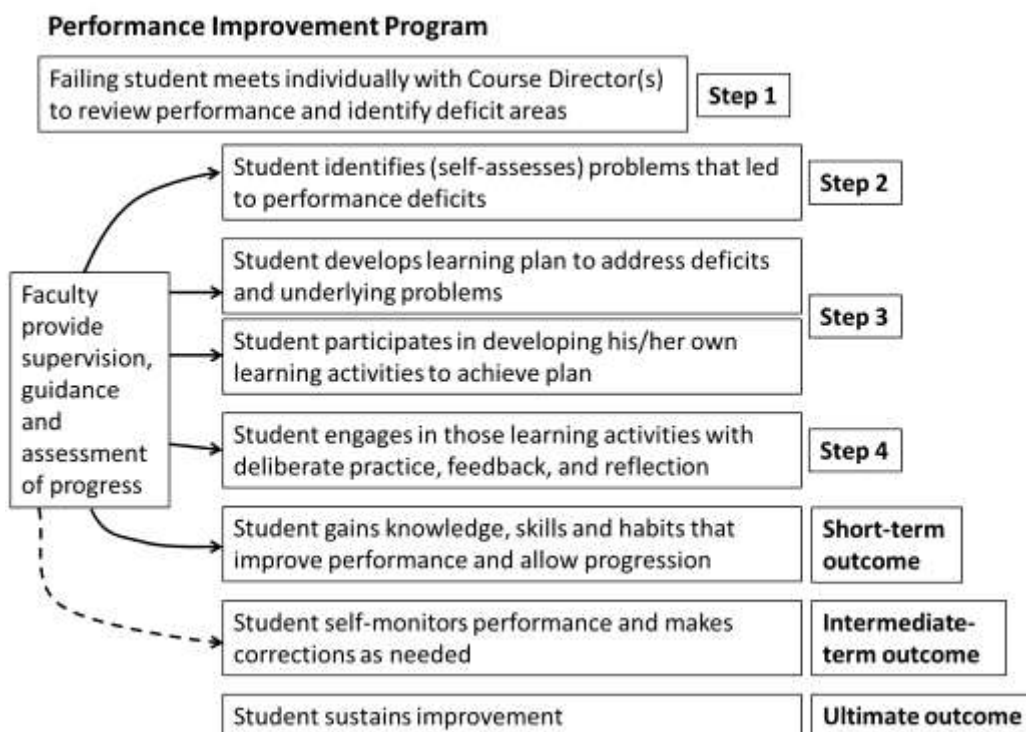
Assignments and Grading

Class of 2016

FSU COM has adopted a pass/fail grading system which is used in the curriculum for the first and second years (See [page 31](#) of Student Handbook). To achieve a grade of Pass in BMS 6110C a student must meet all of the following requirements

- 1) A final average $\geq 70\%$ on all examinations and graded quizzes. Quizzes are formative and will not contribute to your final examination 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 passing during the semester
 - $<65\%$ on any one examOR
 - $<70\%$ on any two exams in the semester

is required to engage in and complete the Performance Improvement Program in consultation with the Course Director. 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.



- 2) A Passing score on the NBME Subject exam, as determined by the Course Director. Students should be aware that there WILL be questions on this exam that they are not prepared to answer. The Course Director is aware of this and takes that into consideration when determining the passing score.
- 3) 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 session) may be considered as an issue of Professionalism and require completion of the Performance Improvement Program.
- 4) Satisfactory completion of all assignments, as determined by the Course Director.
- 5) Demonstration of the attitudes and behaviors of Medical Professionalism in all aspects of the course. Issues of Professionalism may require completion of the Performance Improvement Program.

BRIDGE Students

Grades will be based on written exams (three internal block exams and one external exam (NBME subject examination)). All grades will be represented as A, B+, B, C+, C, D and F. 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 microscopic structures within images.

Grading Scheme for BRIDGE Students: Clinical Microanatomy

- **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 only):

Block exam average (exams I, II, & III) will contribute 80% to the final score

NBME Shelf examination will contribute 20% to the final score: Students should be aware that this examination WILL include items that they are not prepared to answer. The Course Director is aware of this and takes that into account when weighting the score.

Remediation Policy for Students Who Fail a Course

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