



The Florida State University  
College of Medicine

# Clinical Microanatomy

**BMS 6110C**

**Fall 2010**

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# Instructors

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# Course Overview

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## Course Goals

1. Broad Educational Goals:
  - a. Provide a comprehensive educational experience in clinical microanatomy that can be integrated into courses running concurrently and subsequently in the medical curriculum.
2. Knowledge Objectives:
  - 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.
3. 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
4. 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 and 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
- 7.) demonstrate an ability to do peer evaluations of performance and knowledge levels in both the small group and team-based learning setting.
- 8.) display professional behavior and quality speaking skills when presenting a powerpoint presentation based on microanatomy concepts related to the diagnosis of their cadaver used in the Clinical Anatomy course.

## ***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. Sixty percent of each of the four major block examinations will come from material discussed in lecture.

### **Clinical Cases in Small Groups**

This course will incorporate the use of small group case-based sessions to apply microanatomical concepts covered in the previous weeks to clinical diagnoses. There will be 8 small-group sessions that are 1 hour in length. Each small group session will focus on two clinical cases. Students, working in small groups, and under the guidance of facilitators, will discuss the information in the case. From this information 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 identify learning issues they have retrieved through electronic means in order to move forward in the case. These activities will further emphasize the relevance of microanatomy on clinical practice and will prepare the 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. Peer evaluations will be performed and submitted at

the finish of the fall term. 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. Ten percent of each of the four major block examinations will be from material covered in small group sessions.

### **Microanatomy Laboratory**

There is a separate outline on Blackboard for this component which is entitled 'Laboratory Design' and can be found in the Syllabus section. These sessions will be delivered in a team-based learning format and make use of the Bacus webservice 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. Fifteen percent of each of the four major block examinations will be from material covered in the laboratories.

### **Clinical Presentations**

Students will return to their laboratory groups from the Clinical Anatomy course. Nancy Clark, MEd., will give a one hour PowerPoint tutorial, the first week of class. All presentations will be given in front of fellow students and invited faculty. Group presentations will be graded by course faculty based on professionalism, style and ability to respond to class and faculty questioning immediately following the presentation. Each member of the group will be required to create two NBME-style test questions. Each group will report their findings for 15 minutes. Group members along with topic (cadaver diagnosis) will be listed on the Blackboard in the Course Materials under 'Presentations' Please see the separate document further outlining this task in Blackboard under 'course library'. Three percent of the student's final grade will be based on their presentation efforts.

### **Second Life Virtual Patient Education**

Students will be given four assignments to become more effective in teaching their patients about basic science issues related to the practice of medicine. 30 students will be selected to perform the assignments using virtual world technology while the remaining 100 students will perform the assignments using paper. Each assignment will have 3 clinical cases for the student to review and prepare learning objectives for the patient. At the end of the course all members of the class will perform a OSCE style patient education examination. This portion of the course is worth 5% of each student's grade and is primarily based on turning in the assignments on time with effort.

### **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. Three to five practice exam questions will be posted weekly (Wednesday evening) on the Blackboard site (under 'Course Materials' for the week) to assist students in being a successful test takers. 10% of each of the four major block examinations will come from material in the text or from supplementary handouts not covered in the lecture setting.

## Competencies

FSUCOM – Competencies -Course Title BMS 6110C		
Competency Domains	Competencies Covered in the Course	Methods of Assessment
Patient Care	X	Internal exams and quizzes
Medical Knowledge	X	Internal exams and quizzes and NBME subject exam, classroom presentations, TBL quizzes, OSCE
Practice-based Learning	X	Group presentations
Communication Skills	X	Peer evaluation within the assigned teams and during course activities. Group presentations (PowerPoint)
Professionalism	X	Course Director observation. Faculty observation during presentations.
System-based Practice		
NOTES:		

## Policies

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### ***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](mailto: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, found at

<http://www.fsu.edu/~dof/honorpolicy.htm>.

## **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 27-29 of [FSUCOM Student Handbook](#) for details of attendance policy, notice of absences and remediation.

## **Required Materials**

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- 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**

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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

# Grading

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## Assignments

### Test Preparation

Along with lecture reviews every other Friday, there will be test question tutorials the Thursday prior to each of the four major block examinations, these sessions are optional. There will also be a final one hour 'Course Review' before Final Exam week. 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. A 'Discussion Board' has been created under the 'Communication' section on the Blackboard site. This board is entitled 'Questions for Dr. VanLandingham'. This option can be used anonymously and each student can see the other student's question and my answer to the question. Please use this site for course questions only. Any personal questions or concerns should be sent to the Course Director's e-mail address.  
jacob.vanlandingham@med.fsu.edu

### Assessment

Student performance on all activities will result in an accumulation of points which will determine the individual grade in the course. Grades will be based on written exams (four internal and one external (SHELF examination)), lecture and team-based learning laboratory quizzes and oral presentations. All grades will be represented as A, B+, B, C+, C, D and F. Four written 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. Seven lecture quizzes (ten multiple choice questions) will be administered every other Friday beginning the first Friday of the semester (lowest one will be dropped, a student can not drop a zero received due to an un-excused absence). The laboratory grade will come from student responses to two multiple choice questions at the finish of each session (thirteen laboratories with a total of twenty-six questions throughout the semester). Failure to submit a group pre-test will lead to a zero for that laboratory quiz. Group presentations will be graded by course faculty based on professionalism, style and ability to respond to class and faculty questioning immediately following the presentation. See below for component percentages for the course.

## ***Components & Weights***

<b>Item</b>	<b>Percentage</b>
Exams I, II, III & IV (40 questions each):	17% each for a total of 68%
Lecture quiz (7 drop lowest 1, can NOT drop a quiz missed if un-excused)	12%
Laboratory quiz (2 questions at the end of each lab, pretest required)	5%
Presentations (style and professionalism)	3%
Shelf examination	7%
Second Life Virtual World Patient Education Assignment	5%

## ***Grading Scale for Clinical Microanatomy***

<b>Grade</b>	<b>Percentage</b>
A	> 90%
B+	87 – 89.9%
B	80 – 86.9%
C	70 – 76.9%
C+	77 – 79.9%
D	65 – 69.9%
F	<64.9%