The Florida State University
College of Medicine

BMS 6110C

Clinical Microanatomy

Fall 2011

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Course Overview

This syllabus is intended to be a current guide to the activities and grading of this course. The content of the syllabus can change during the course and will be reflected on the electronic site for the course. Please check your Blackboard announcements for any changes in the course syllabus or schedule.

This course will provide a solid foundation in microanatomy and cell biology with relation to clinical presentation. This course will introduce students to the cellular mechanisms of disease processes. This 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 be taught concurrently with Doctoring 102 and Clinical Neuroscience courses. The course will promote student-directed problem solving skills in a lecture (large group), laboratory (team-based learning) and small group settings. This course will enable the students to apply their knowledge to learning pathophysiologic and biochemical principles in later courses delivered 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

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 webslides) 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. **Sixty-five 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 6 small-group sessions that are 1:15 hour in length. Each small group session will focus on five clinical cases. Students, working in small groups, and under the guidance of student and faculty facilitators, will discuss the information in the case. Student facilitators for the week will be *required* to attend a preview session of the case the day before the case is delivered. 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. 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 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. **Fifteen percent of each of the four major 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. 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.

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.**

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 will is outlined below:

1.) Student groups will be assigned 8-10 pre-laboratory slides for analysis and testing. The 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 off and turned in before the laboratory in paper form (one per group, PLEASE).
2.) Using virtual microscopy eight slides of normal histology and two of pathology will be analyzed, compared and discussed in the first 40 minutes of the session by the facilitators. 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 using Vpad). Students will then be asked to defend their answer.
3.) In the remaining twenty 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.

Laboratory Team Testing:

There will be 2 NBME-style questions based on the clinical correlation at the end of each session. All groups will have two minutes to work together to answer the question. Each student in the group will fill out their own answer sheet for their individual grade that week. There are thirteen laboratory sessions (excluding week one overview) and twenty-six total questions that combined will make up 5 % of the student's final grade. All points for a session will be deducted from groups who do not turn in their pre-test answer sheet.

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		
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

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) 645-8256Fax: (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 27-29 of *FSUCOM Student Handbook* for details of attendance policy, notice of absences and remediation.

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, Junqeira

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 2015:

FSU COM has adopted a pass/fail grading system i for the first and second years. See page 31 of Student Handbook for details. A grade of Pass will be given for satisfactory completion of all of the following:

An average of ≥70% on all block exams, with no individual exam score <65%.

Any exam with a score <65% must be remediated as determined by the Course Director (details below).

An average of ≥70% on all quizzes (lecture and laboratory).

A passing score on the NBME subject examination, as determined by the Course Director.

Remediation policy for any block exam score <65%: Remediation will be by small group meetings which address specific areas of weakness. Remediation sessions will take place at 9:00 AM during the 2 weeks immediately following the block exam week involved. The exact days will be determined by student and course director schedule

There are no remediation options for the NBME subject examination.

Any student who scores between 65% and 70% on any exam will be allowed to take part in the remediation, but is not required to do so.

This policy is in place to assure that students have the fundamental knowledge needed to advance through the course which is, by nature, cumulative, to assure that students struggling with material get sufficient academic support, and to reduce the chances of any student being mathematically excluded from the possibility of passing the course. It is not intended to be an "alternate acceptable" strategy for passing the Clinical Microanatomy course or to encourage students to postpone preparation for the Clinical Microanatomy block exams.

BRIDGE Students:

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 block exams (four internal and one external (NBME subject examination)), lecture and team-based learning laboratory quizzes. 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). 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.**

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):

Exams I, II, III & IV (40 questions each): 18% for a total of 72%

Lecture quiz (7 drop lowest 1): 15%

Laboratory quiz (2 questions at the end of each lab, **pretest required**): 3%

Shelf examination: 10%

Remediation Policy for Students Who Fail a Course

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

Important

This is a 'living' document and may be subject to change. You will be notified on the Blackboard site (Announcements) of any changes.