

# Clinical Microanatomy 6110C Lecture Syllabus: 2008

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 Blackboard site for the course. Please check your Blackboard announcements for any changes in the course syllabus or schedule.

## OVERVIEW

### Course Description:

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 also offer an introduction to current techniques in Molecular Medicine and how these techniques are used to target accurate clinical diagnoses. All major tissue groups will be covered in the course. The course will be taught concurrently with Doctoring 102 and Clinical Neurosciences courses. The course will promote student-directed problem solving skills in a lecture (large group), laboratory (team-based learning) and small group settings. Group presentations will be performed to encourage student interaction, sharing of intellectual property and public speaking skills. 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 relate detailed molecular alterations to overall disease processes.

### 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
- 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.

### **Integration of course objectives with College of Medicine Educational Goals and objectives**

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.
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.

**Course Director:**

Jacob W. VanLandingham, Ph.D. Assistant Professor  
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**Course Faculty:**

Sebastian Alston, PhD, Associate Dean of Medical Education, Year 1 course director of Pathology  
Lynn Romrell, PhD, Course Director for Clinical Anatomy  
Ewa Bienkiewicz, PhD, Assistant Professor and Scholar Scientist

**COURSE COMPONENTS**

**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 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.**

**Clinical Presentations:** Students will return to their laboratory groups from the Clinical Anatomy course. Nancy Clark, MEd., will give a one hour PowerPoint tutorial, in class, 2 weeks (Oct. 24<sup>th</sup>) before presentations are to be given. 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. Students should emphasize the relationship between gross anatomy and microanatomy concepts with regards to their cadaver's diagnosis. Each group will meet with the Course Director prior to the presentation to assist in quality of performance. The diagnosis of your cadaver will be the basis for your presentation. For example if your cadaver was diagnosed with end stage Alzheimer's disease you will collect and report on microanatomical structures which have been altered in the brain of an Alzheimer's disease patient. You will then relate these microanatomical structural alterations to functional outcomes of the cell. A microanatomical cause of death will be required of each student group. 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' approximately 3 weeks prior to the Nov. 5-9 week of presentations. **Five percent of the student's final grade will be based on their presentation efforts.**

### **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.**

### **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). **Three-Five percent of each of the four major block examinations will come from lectures on Molecular Medicine.**

## 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 powerpoint presentations. 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.**

## 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.

### Grading Scheme for Clinical Microanatomy

- A = > 90%
- B+ = 87 – 89.5%
- B = 80 – 86.5%
- C+ = 77 – 79.5%
- C = 70 – 76.5%
- D = 65 – 69.5%
- F = <64.9%

**Grading:**

Exams I, II, III & IV (40 questions each): 15% for a total of 60%

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**): 13%

Presentations (style and professionalism): 5%

Shelf examination: 10%

**FSU COM ATTENDANCE POLICY****COM Philosophy**

We believe that:

Professionalism is a major component of our medical curriculum. We believe students should conduct themselves appropriately in the various educational activities of the curriculum. This conduct includes coming to educational activities on-time, using the laptop computers only for course work during the educational activity, and not disrupting the class if late. The faculty should also demonstrate professionalism, by starting and ending all scheduled educational activities on time and providing a course schedule with clearly explained course policies in the course syllabus. Any changes in the schedule should be given to the students in a timely manner.

Students will be accountable and personally responsible for attending all educational activities (small groups, labs, clinical experiences, examinations, lectures, computer sessions, etc.).

Unexcused absences reflect negatively on the goals and objectives of the medical curriculum and demonstrate unprofessional behavior by the respective student.

We owe it to our state legislature and the citizens of the State of Florida to provide a quality educational program that meets the needs of our students in preparing them for the M.D. degree.

**Attendance Policy**

Students are expected to attend all scheduled activities. Students are expected to be on time. Being on time is defined as being *ready to start* at the assigned time. If a student has an emergency that prevents her/him from attending a scheduled activity, s/he is to call and notify the Office of Student Affairs (Year 1/2) or the Regional Campus Dean (Year 3/4) and request that they inform the supervisors/professors/clerkship faculty/education director for that activity. If at all possible, the student should also call and at a minimum, leave a message with one of the course/clerkship directors. *It is important that students realize that their absence or tardiness negatively impacts a number of other people.*

Attendance, including tardiness, is part of the student's evaluation for professionalism. Negative evaluations may result in decreased grades and in severe cases, referral to the Student Evaluation and Promotion Committee.

## **Procedure for Notification of Absence**

### **Year 1/2**

If the student knows in advance of an upcoming legitimate absence, the "Advance Notification of Absence from Educational Activity (ies)" form should be completed with signatures from the student, the Assistant Dean for Student Affairs, the course faculty member and the Course Director. The form will be filed in the Office of Student Affairs. The implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.) will be given to the student by the course director and final decisions regarding these actions shall rest with the course director.

If the absence occurs due to an unforeseen emergency, the student should contact the course director and the Assistant Dean for Student Affairs immediately to report the absence including the reason for the absence. The implications for the absence (e.g., remediation, course grade adjustment, make-up exam, etc.) will be given to the student by the course director and final decisions regarding these actions shall rest with the course director.

## **Remediation Policy for Absences from Examinations, Quizzes, Small Group Sessions, Laboratory Sessions, Clinical Learning Center Sessions, Preceptor visits, and Clerkship Call**

The remediation policies for absences from examinations, quizzes, small group sessions, laboratory sessions and clerkship call are:

1. **POLICY ON MISSED EXAMINATIONS:** Students are required to take major in-term and final examinations. According to the curriculum committee a student can only be excused from an examination by a course/education director decision based on the personal situation of the student. The course/education director will determine the time of the exam make-up session. Also, according to the curriculum committee decision and the existence of the FSU-COM honor code, the student will be given an equivalent but novel examination.
2. **POLICY ON MISSED QUIZZES:** Students are required to take quizzes in the courses. A student can only be excused from a quiz by a course director decision based on the personal situation of the student. The student must make arrangements with the course/education director to make up a missed quiz. Also, according to the curriculum committee decision and the existence of the FSU-COM honor code, the student will be given an equivalent but novel quiz.

3. POLICY ON MISSED SMALL GROUP SESSIONS, LABORATORY SESSIONS, CLINICAL LEARNING CENTER SESSIONS, PRECEPTOR VISITS, AND CLERKSHIP CALL: The student should contact the course director and small group leader for instructions on remediation of the missed session and material covered.

**Policy on un-authorized absences for clinical microanatomy:**

A grade of zero will be given for that component if it is determined that a student has an un-excused absence from any graded activity.

**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.

**Academic Honor System:**

"The Academic Honor System of The Florida State University is based on the premise that each student has the responsibility to: 1) Uphold the highest standards of academic integrity in the student's own work, 2) Refuse to tolerate violations of academic integrity in the academic community, and 3) Foster a high sense of integrity and social responsibility on the part of the University community." Please note that violations of this Academic Honor System will not be tolerated in this class. Specifically, incidents of plagiarism of any type or referring to any unauthorized material during examinations will be rigorously pursued by these instructors. Before submitting any work for this class, please read the Academic Honor System in its entirety (as found in the FSU General Bulletin and in the FSU Student Handbook) and ask the instructors to clarify any of its expectations that you do not understand.

**ADA Statement:**

Florida State University provides high-quality services to students with disabilities, and we encourage you to take advantage of them. Students with disabilities needing academic accommodations should: 1) register with and provide documentation to the Student Disability Resource Center in Kellum Hall (644-9566), and 2) bring a letter to the instructor from the SDRS indicating that you need academic accommodations. Please do this as soon as possible so that you present the proper paper work to the course director five days prior to the course.

**Required Textbook and Atlas:**

- 1.) Histology A Text and Atlas: An Introduction to Pathology 2nd edition, Kierszenbaum, LWW

- 2.) Wheater's Functional Histology: A Text and Color Atlas 5<sup>th</sup> edition, Young, Elsevier

### **Suggested Textbook**

Netter's Essential Histology, 1<sup>st</sup> 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.

### **Important**

- 1.) This is a 'living' document and may be subject to change. You will be notified on the Blackboard site (Announcements) of any changes.
- 2.) You are *required* to fill out all assigned peer evaluations (Lab groups) monitored by the Medical Education staff. The field of Medicine requires heavily on evaluation of its personnel to ensure patient safety and optimal care. Take this opportunity to get familiarized with this process and take it seriously.