The Florida State University
College of Medicine

BMS 6706C

Clinical Neuroscience

Fall 2011

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Instructors

Course Director

Charles Ouimet, Ph.D.

Office 2300 H Phone 850-644-2271

Email charles.ouimet@med.fsu.edu

Course Overview

Course Goals

This course is designed to provide students with a fundamental understanding of clinical neuroscience. Students who complete this course will understand the normal anatomy and physiology of the nervous system and will recognize important symptoms and signs associated with neurological disease. In addition, students will understand the functional and clinical significance of the three-dimensional organization of anatomical structures, and the interconnections and spatial relationships that bind structures together in the nervous system. Mastery of these concepts will enable students to localize lesions in the central nervous system and predict the neurological deficits associated with lesions. Our goal is to achieve long-term acquisition of neuroscience concepts such that students perform well in the neuroscience/neurology area as clinicians long after the course has been completed.

Learning Objectives

Knowledge

1. Develop a three-dimensional image of the brain and spinal cord.
2. Understand the relationship between lesion location and functional deficits.
3. Acquire a working knowledge of the functional anatomy of neuronal pathways
4. Acquire the basic concepts necessary for further study in other courses and clinical situations, especially those involving neurology.
5. Develop an understanding of neurological changes associated with aging, such as Alzheimer's disease and other dementias.
6. Develop an understanding of how neuroscience information is used by clinicians in medical diagnosis.
8. Understand the cell biology of neurons, muscle cells and neurosecretory cells as well as the biophysical and physical chemical principles that underlie their function.
9. Understand the physiology and biochemistry of neurotransmission and other types of inter- and intra-cellular communication, including short and long-term modification.
10. Understand the neurophysiological mechanisms controlling movement, sensation and overall integration of visceral function.
11. Understand current physiological concepts related to higher brain functions such as cortical integration, learning and memory.
12. Understand the relationships and interdependency of the nervous system and the endocrine system.

Skills

1. Demonstrate a logical problem-solving approach to clinical neurological cases.
2. Demonstrate familiarity using informatics to find information relevant to neuroscience.
3 Demonstrate ability to apply neuroanatomical knowledge to radiological images.

Attitudes

1. Demonstrate professional behavior in interacting with each other, with guest patients, and with faculty.

Course Format

Neuroscience laboratory and clinical discussions

The laboratory sessions are designed for active "adult" learning. Except for the first lab exercise, which will be attended by an abundance of hovering and nurturing faculty, students will work in independent groups of six to photograph assigned brain regions (those under current study in the course schedule), label specific structures, and place the labeled photographs in PowerPoint presentations. The latter will be stored in a blackboard portfolio that will be graded, and on the scheduled lab days, the portfolios will be presented and critiqued in class. The goals are to develop a 3D appreciation of brain structure that facilitates clinical problem solving, to become accustomed to standing up in front of the class and speaking (not easy with a big bad crowd of med students and rowdy professors!), and to learn what structures neighbor each other.

Lectures

A lecture format that invites discussion and student participation will be used. Students should come to class with a good familiarity of the lecture material, facilitating discussion and active learning during lectures. We will help with especially difficult material by preparing Camtasia/Captivate recordings, to be viewed prior to lecture time, that cover the basic ideas to be discussed in class.

Team-based learning (TBL) sessions

In the main classroom, students will take a "readiness quiz" on a reading assignment and then break up into small groups. The students will then re-take the same quiz working in groups and submit the group's answers. We'll give you the higher of the two quiz scores. The groups are then challenged with a clinical case to analyze and questions to ponder. We will then call on the groups to defend their answers and show their clinical reasoning.

Peer evaluation

Midway and at the end of the course, students will evaluate the other group members anonymously. These evaluations will be shared with the students and serve as a guide to how others see them. Lack of participation in group efforts will get the attention of the faculty who will then work with the student to remediate the problem.

Competencies

FSUCOM – Competencies –Clinical Neuroscience BMS 6706C		
Competency Domains	Competencies Covered in the Course	Methods of Assessment
Patient Care	X *	
Medical Knowledge	X	Internal exams and NBME subject exam, classroom presentations, TBL quizzes
Practice-based Learning	X *	
Communication Skills	X	Faculty and TA observation; Peer and self-evaluation within the assigned teams and during course activities.
Professionalism	X	Faculty observation; Peer and self-evaluation within the assigned teams and during course activities.
System-based Practice		
NOTES: * Students observe physician-patient encounters when patients are presented to the class and in films of patient/physician encounters. Students are also encouraged to ask their own questions when patients are being interviewed in front of the class.		

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)

The College of Medicine has detailed attendance policies as they relate to each cohort and events that conflict with course schedules. See pages 28-30 of *FSUCOM Student Handbook* for details of attendance policy, notice of absences and remediation.

Required Materials

1. The Human Brain, 5th (or newest) edition, Nolte, ISBN 0-323-01320-1.
2. Neuroanatomy through clinical cases, Blumenfeld.
3. Clinical Neuroanatomy made ridiculously simple, S. Goldberg.

Suggested Materials

Basic Clinical Neuroanatomy, Young and Young.

Kandel ER.; Schwartz JH.; Jessel T. "Principles of Neural Science", 4th Ed. McGraw-Hill 2000.

Squire, L.R. "Fundamental Neuroscience" Academic Press 1998. Good for reference.

Neuroanatomy, an atlas of structures, sections and systems, 4th (or latest) edition, Duane Haines, ISBN 0-683-03817-6

Useful Web sites:

http://www.medlina.com/neuroanatomy.htm General neurology web sites

http://www.vh.org/adult/provider/anatomy/BrainAnatomy/BrainAnatomy.html Brain atlases

http://www.med.harvard.edu/AANLIB/home.html The Harvard brain atlas

Grading

Assignments and Grading

FSU COM has adopted a pass/fail grading system for the first and second years. See page 31 in the Student Handbook for Definition of Grades. To receive a grade of Pass, a student must complete 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 before the next exam.
- Passing grade on the NBME subject exam, as determined by the Course Director.
- Satisfactory preparation for and participation in all Team Based Learning exercises, as determined by the Course Director and peer evaluation.
- Satisfactory completion of the laboratory portfolio, as determined by the Course Director.

Each exam uses "board-type" multiple choice questions that emphasize problem solving rather than rote memory. The course endorses a criterion-referenced teaching philosophy in which exams test the specific ideas that all students are expected to master (criteria), with no attempt to rank order student performance. Thus, there is no reason for students to feel competitive with each other. On the contrary, higher achievement can be expected when students work cooperatively. While all students are expected to pass each exam with a score ≥ 70%, we encourage you to aspire to mastery (100%) of the material and will, do everything we can to help you achieve scores of 80% or higher.