Syllabus

Functional Neuroanatomy and Behavior

PSYC 547
Fall 2017, Mon and Wed 10:00 AM-11:50 AM

Location: KAP 141

Course Instructor/ Director: **Antoine Bechara**
Office: HNB-B26

Office Hours: Mon-Wed 12:00-1:00 PM
Also by appointment
Contact Info: bechara@usc.edu

IT Help: NA
Hours of Service: NA
Contact Info: NA

Course Description: The course consists of lectures, clinical cases on patients with neurological lesions or diseases for case based learning, and practical sessions involving learning neuroanatomy from Atlases with MRI scans, which are substitutes for laboratory dissections of the human brain and spinal cord. The course material is interrelated throughout these forms of teaching, giving students multiple ways of learning the material.

Learning Objectives: The objectives of the course are: (1) to introduce basic concepts about the organization, structure, and function of the human central nervous system; (2) to enable students to apply these fundamental principles toward understanding nervous system function and dysfunction and toward clinical problem-solving in relation to neurological and neuropsychological disorders; (3) to provide the necessary background for correlation with related courses, for advanced study of the nervous system, and for monitoring new developments in the basic and clinical neurosciences.

Prerequisite(s): No pre-requisites for graduate level students.
Undergraduates in senior year are allowed to enroll (no specific pre-requisites), but instructor permission is required.
Co-Requisite (s): none
Concurrent Enrollment: none
Recommended Preparation: Physiological or Clinical Psychology, Neuroscience.

Course Notes: Course Syllabus, Lecture Materials, and Clinical Cases will be posted on the web (Black Board) as the course progresses.

Attendance and Student Responsibilities: Students are held responsible for all material covered in class. Students are also responsible for all announcements or schedule changes that are made in class. Attendance at examination is mandatory, unless students receive permission in advance from the Instructor to be excused from attending an examination at the scheduled time.

Technological Proficiency and Hardware/Software Required: NA

Required Textbooks and Course Material:
1. Course Syllabus, Lecture Materials, and Clinical Cases will be posted on Black Board.

Suggested Reference Book:
1. John Nolte: The Human Brain An Introduction To Its Functional Anatomy, 6nd Edition, Mosby Elsevier, 2009.

Description and Assessment of Assignments: NA

Grading Breakdown: There will be 3 midterm exams covering lectures and practical/ clinical cases, and a final examination. Final grades will be calculated as follows:

Term Test 1	20%
Term Test 2	25%
Term Test 3	25%
Final Exam	30%
Final Grade	**100%**

Assignment Submission Policy: NA

Additional Policies: NA

Statement for Students with Disabilities
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Statement on Academic Integrity
USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *Scampus,* the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: http://www.usc.edu/dept/publications/SCAMPUS/gov/. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/.

Hybrid, Local Online, or Distance Learning Courses
Not applicable**.**

Course Schedule: A Weekly Breakdown

Date	class #	Topic Description
Week 1		
8/21	1	Course Introduction, Gross Topography, Meninges
8/23	2	Ventricles, Blood supply of CNS in health and in neurologic disease.
Week 2		
8/28	3	Spinal Cord: motor and sensory pathways
8/30	4	Spinal Cord injuries, diseases, and syndromes
Week 3		
9/4		**Labor Day-Holiday**
9/6	5	Clinical Cases for Class Discussion 1: Case Based Learning Self-study Laboratory Exercise: The human brain (overview) and spinal cord
Week 4		
9/11		**Term Test 1**
9/13	6	Medulla: sensory and motor pathways, and signs of cranial nerve damage
Week 5		
9/18	7	Pons: sensory and motor pathways, and signs of cranial nerve damage; coma versus locked in syndrome.
9/20	8	Midbrain: sensory, motor, and visual reflexes pathways
Week 6		
9/25	9	Clinical Cases for Class Discussion 2: Case Based Learning Self-study Laboratory Session: Medulla, Pons, and Midbrain.
9/27	10	Diencephalon: Thalamus and Internal Capsule: Roles in sensory, motor, learning and memory, and language. Hypothalamus and Pituitary, and Limbic System: Roles in stress and emotional responses, eating disorders.
Week 7		
10/2	11	Basal Ganglia and Movement Disorders: Parkinson's, Huntington's, Hemiballismus.
10/4	12	Cerebellum and role in motor movement, learning, memory, and cognition.
Week 8		
10/9	13	Self-study Laboratory Exercise: Diencephalon, Basal Ganglia, Internal Capsule, and Limbic System
10/11		**Term Test 2**
Week 9		
10/16	14	CNS Visual Pathways and Control of Eye Movements
10/18	15	Cerebral Cortex 1: Anatomy, motor and sensory systems and dysfunctions; language areas and the aphasias; frontal areas and social dysfunctions
Week 10		
10/23	16	Cerebral Cortex 2: Auditory system, memory systems and amnesic syndromes, visuospatial functions, and vascular syndromes.
10/25	17	Cerebral Cortex 3: Pathologies- Stroke, Traumatic Brain Injury

Week 11

10/30	18	Cerebral Cortex 4: Seizure Disorders, Brain Tumors
11/1	19	The Neurologic Exam as a Lesson in Functional Neuroanatomy and understanding behavioral dysfunctions.

Week 12

11/6	20	Overview of Neuropsychological Syndromes: apraxias, aphasias, neglect, agnosias
11/8	21	Self-study Laboratory Session: Long Association Bundles, Coronal and Horizontal Brain Sections.

Week 13

11/13		**Term Test 3**
11/15	22	Clinical Cases Class Discussion 3: Case Based Learning

Week 14

11/20	23	Clinical Cases Class Discussion 4: Case Based Learning
11/22		**Thanksgiving**

Week 15

11/27	24	Functional Anatomy of Major Neurotransmitter Systems: depression, anxiety, and sleep disorders.
11/29	25	Introduction to Clinical Neuroradiology and Research in Neuroimaging

Final Exam