Functional Neuroanatomy

6338 PSYC ACN HCS

Spring 2013

Instructor: Kristen Kennedy, PhD **email:** Kristen.kennedy1@utdallas.edu
Office: JO 3.808 **Office Hours:** Thurs 2-3 or by appointment
Class Meets: Tuesdays and Thursdays, 4:00-5:15 pm **Class Location**: CR 1.202 (Callier Richardson)

Teaching Assistant: Sishi Liu, sxl083020@utdallas.edu; **TA Office**: JO 3.306; **TA Office Hours:** Tues 2-3

Course Description: Function of each major brain system as related to the organization and synaptic connections of their principal nuclei. Function of each system related to the neurological disorders associated with disease or lesions at specific locations.

Course Objectives: Students will learn the neuroanatomical structure of the human brain, how this anatomy relates to function, how the brain is connected, and learn about techniques that allow for the investigation of the brain (e.g., magnetic resonance imaging; MRI). The course will involve viewing extensive visual materials including slides of different dissections of the human brain, MRI images of brain structures and studying print and online brain atlases.

Required Textbooks:

John Nolte, (2009) "The Human Brain: An Introduction to its Functional Anatomy". With STUDENT CONSULT Online Access, Sixth Edition, Mosby Publishers/Elsevier.

John Nolte & Jay B. Angevine Jr. (2007). "The Human Brain in Photographs and Diagrams" with CD-ROM [Spiral-bound], Third Edition, St Louis, Mosby Elsevier.

Suggested Resources:

Online access to Student Consult provided by Mosby is available with purchase of the Nolte textbook. The website includes reviews of each chapter, plus provides an online neuroanatomy atlas with review, and I highly recommend you make use of it.

If knowledge of neuroanatomy will play a large role in your future career (e.g., in cognitive neuroscience), purchasing an atlas will be very helpful to have as a general resource. A good one that is less expensive than most is:

Woolsey, TA, Hanaway, J, Gado, M. (2008). "The Brain Atlas: A Visual Guide to the Human Central Nervous System" Third Edition. Spiral-bound is nice because you can fold it open in front of your screen. ~$45.95

Proposed Class Schedule and Topic Covered

Jan 15 Course overview
Jan 17 Brain dissection video
Jan 22 Introduction to the nervous system (Chapter 1)
Jan 24 Gross anatomy and general organization of the CNS (Chapter 3)
Jan 29 Meningeal coverings, ventricular system, CSF (Chapters 4 & 5)
Jan 31 Chapters 4 & 5 (cont'd)
Feb 5 Vascularization of the brain (Chapter 6)
Feb 7 Brain development (Chapter 2)
Feb 12 Electrical signaling and synapses (Chapters 7 & 8)

Feb 14 Catch-up, Brain Atlas Study, and brief Test review
Feb 19 EXAM 1 (Nolte Chapters 1-8)
Feb 21 Organization of the Brain Stem (Chapters 11 & 15)
Feb 26 Cranial Nerves and their Nuclei (Chapter 12)
Feb 28 Sensory Receptors and the Peripheral Nervous System (Chapter 9)
Mar 5 Taste and Smell (Chapter 13)
Mar 7 Hearing and Balance (Chapter 14)
---------- *March 12 and 14: No class, Spring Break* ----------
Mar 19 Vision (Chapter 17)
Mar 21 Catch-up, Atlas Study, and brief Test review
Mar 26 EXAM 2 (Nolte Chapters 9, 11-15, 17)
Mar 28 Thalamus and Internal capsule (Chapter 16)
Apr 2 Overview of Motor System (Chapter 18)
Apr 4 Spinal Cord (Chapter 10)
Apr 9 Basal Ganglia (Chapter 19)
Apr 11 Cerebellum (Chapter 20)
Apr 16 Cerebral Cortex and White Matter Tracts (Chapter 22)
Apr 18 Chapter 22 (cont'd)
Apr 23 Hypothalamus and Limbic System (Chapter 23)
Apr 25 Ch 23 (cont'd) & Formation, Modification, and Repair of Connections (Chapter 24)
Apr 30 Ch 24 (cont'd)
May 2 Catch-up, Atlas study, Test review
Final Exam: May 9th, 2:00 – 4:45pm

Grading Policy:
90 – 100 = A
80 – 89 = B
70 – 79 = C
60 -69 = D; below 60 is an F

There will be three exams worth 80% of the final grade. In-class quizzes and brain labeling exercises will be worth the other 20%. Class attendance is expected. Students are expected to arrive on time, participate, and to respect the classroom atmosphere by turning off electronic communication devices (no texting, cell phones or video gaming in class!).

Do not miss exam days! Make-up exams will only be allowed if: (a) you were seriously ill and have verifiable documentation from a physician, or (b) you were detained the day and time of the exam, or (c) you made arrangements prior to the exam to attend to an urgent matter (e.g., funeral).

UT Dallas Syllabus Policies and Procedures
The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.
Please go to http://go.utdallas.edu/syllabus-policies for these policies.

Student Conduct and Discipline:

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UT Dallas printed publication, A to Z Guide, which is available to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the Rules and Regulations, Series 50000, Board of Regents, The University of Texas System, and in Title V, Rules on Student Services and Activities of the university's Handbook of Operating Procedures. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391) and online at http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html.

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Students are expected to be attentive during class and to participate actively in group activities. Students are expected to listen respectfully to faculty and to other students who are speaking. Racism, sexism, homophobia, classism, ageism, and other forms of bigotry are inappropriate to express in class. Classes may discuss issues that require sensitivity and maturity. Disruptive students will be asked to leave and may be subject to disciplinary action.

Academic Integrity: The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic Dishonesty: Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, submitting for credit any work or materials that are attributable in whole or in part to another person, taking an examination for another person, or any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source, is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Disability Services: It is the policy and practice of The University of Texas at Dallas to make reasonable accommodations for students with properly documented disabilities. However, written notification from the Office of Student AccessAbility (OSA) is required. If you are eligible to receive an accommodation and would like to request it for a course, please discuss it with an OSA staff member and allow at least one week's advanced notice. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact the Office of Student AccessAbility for a confidential discussion. The primary functions of the Office of Student AccessAbility are to provide: 1) academic accommodations for students with a documented permanent physical, mental or sensory disability, 2) non-academic accommodations, 3) resource and referral information and advocacy support as necessary and appropriate. OSA is located in the Student Services Building, suite 3.200. They can be reached by phone at (972) 883-2098, or by email at disabilityservice@utdallas.edu.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.