Functional Neuroanatomy

PSYC/ACN/HCS 6338 Spring 2014

Instructor: Kristen Kennedy, PhD **email:** Kristen.kennedy1@utdallas.edu
Office: JO 3.808 **Office Hours:** Thurs 2:30-3:30 or by appointment
Class Meets: Tuesdays and Thursdays, 1:00-2:15 pm **Class Location**: CR 1.202 (Callier Richardson)

Teaching Assistant: Sishi Liu, sxl083020@utdallas.edu; **TA Office**: JO 3.306; **Office Hours:** Tues 2:30-3:30

Course Description: An introduction to human neuroanatomy organized by major brain system. Function of the neuroanatomy of each major system and relation to neurological disorders associated with damage to the neuroanatomy of the system. (3-0) T

Course Objectives: 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. At the conclusion of this course students will be able to:

Identify the neuroanatomical structure of the human brain; Describe how this anatomy relates to brain function; Discuss how the brain is connected; and Understand *in vivo* techniques that allow for the investigation of the brain (e.g., magnetic resonance imaging; MRI).

Required Textbooks:

- John Nolte, (2009) "*The Human Brain: An Introduction to its Functional Anatomy*". With STUDENT CONSULT Online Access, 6th Edition, Mosby Publishers/Elsevier.
- John Nolte & Jay B. Angevine Jr. (2013). "*The Human Brain in Photographs and Diagrams*" with CD-ROM [Spiral-bound], 4th 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 interactive online neuroanatomy atlas with review/quiz, 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. ~$45.95

Proposed Class Schedule and Topic Covered	
Jan 14	Course overview
Jan 16	Introduction to the nervous system (Chapter 1)
Jan 21	Gross anatomy and general organization of the CNS (Chapter 3)
Jan 23	Meningeal coverings, ventricular system, CSF (Chapters 4 & 5)
Jan 28	Chapters 4 & 5 (cont'd)
Jan 33	Vascularization of the brain (Chapter 6)
Feb 4	Chapter 6 (cont'd)
Feb 6	Brain development (Chapter 2)
Feb 11	Electrical signaling and synapses (Chapters 7 & 8)
Feb 13	Catch-up, Brain Atlas Study, and brief Test review
Feb 18	**EXAM 1 (Nolte Chapters 1-8)**

Feb 20	Organization of the Brain Stem (Chapters 11 & 15)
Feb 25	Cranial Nerves and their Nuclei (Chapter 12)
Feb 27	Sensory Receptors and the Peripheral Nervous System (Chapter 9)
Mar 4	Taste and Smell (Chapter 13)
Mar 6	Hearing and Balance (Chapter 14)
----------	*March 11 and 13: No class, Spring Break* ----------
Mar 18	Vision (Chapter 17)
Mar 20	Catch-up, Atlas Study, and brief Test review
Mar 25	**EXAM 2 (Nolte Chapters 9, 11-15, 17)**
Mar 27	Thalamus and Internal capsule (Chapter 16)
Apr 1	Overview of Motor System (Chapter 18)
Apr 3	--*Cognitive Aging Conference*-- Guest Lecturer Dr. Aage Møller: Spinal Cord (Chapter 10)
Apr 8	Basal Ganglia (Chapter 19)
Apr 10	Cerebellum (Chapter 20)
Apr 15	Cerebral Cortex and White Matter Tracts (Chapter 22)
Apr 17	Chapter 22 (cont'd)
Apr 22	Hypothalamus and Limbic System (Chapter 23)
Apr 24	Ch 23 (cont'd) & Formation, Modification, and Repair of Connections (Chapter 24)
Apr 29	Ch 24 (cont'd)
May 1	Catch-up, Atlas study, Test review
	Final Exam: University will announce date and time by Feb 1

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 combine to 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).

If you find that you need a little **extra credit** to help your final grade, I will allow each student to choose up to 5 suggested readings from the Nolte textbook (found at the end of each chapter) and write a 2 page paper explaining why you chose that particular paper, what it taught you beyond the text/lecture, summarizing that article (e.g., what they researchers did and why they did it, what they found), but most importantly, why it helped solidify a topic or better expand on a brain region or system that you didn't know as much about before. These papers will be worth 2 points each for a total of 10 points added to the total number of points in the course if you do all 5. No other extra credit options will be entertained. Please **note** that these 10 points will not alter your grade drastically, but might just bump you up to the next letter grade if you are on the cusp.

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.