

NSC 4366 .001 Functional Human Neuroanatomy

— Spring 2007

Green Hall 4.301, Monday & Wednesday Lectures 2:30PM - 3:45PM

Instructor Contact Information

Dr. R. Greenwald

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Office hours: Monday 12:30-1:30PM or by appointment

Course Web Site: <http://webct6.utdallas.edu> (login-in and go to the NSC 4366 course)

Teaching Assistant: Ben Porter

Office: GR 4.512

Office Hours: Wednesday 12:30 -1:30PM

E-mail: bap061000@utdallas.edu

Prerequisites: None

Corequisites: NSC 4166 Neuroanatomy Workshop

Course Description:

This course will introduce students to the anatomical organization and basic functional principles of the major systems that work together in the human brain: sensory, motor, cortical and modulatory. This course will prepare students with the medical terminology and neurological concepts for a general understanding of the human brain and its functions in relation to disease and behavior. The overall objective of the course will be to build a three-dimensional understanding of nervous system structure and organization. This understanding will be based upon anatomical connections, system functions, and diseases that affect the brain.

Learning Objectives:

After completing the course, students should be able to:

1. Describe the historical development of neuroscience as a cross-disciplinary science in relation to neuroanatomy.
2. Describe neural mechanisms of (1) motor control, (2) sensory processing, (3) homeostatic maintenance, and (4) higher cognitive functions (including learning, memory and emotions).
3. Define and appropriately use anatomical terminology.
4. Locate and identify major brain structures on brain atlas plates, MRI, CAT, and PET scans.
5. Describe the anatomical and functional organization of the autonomic nervous system and neuroendocrine

systems.

6. Integrate pathological findings from psychology, psychiatry, physiology, and clinical neurology with basic scientific work in relation to neuroanatomy and neural function.
7. Define, locate and identify the major neurovascular, brain stem and spinal structures.

Required Textbook and Materials:

The Human Brain, 5th Edition

by John Nolte (Mosby, 2002)

The Human Brain in Photographs and Diagrams, 2nd Edition

by John Nolte and Jay B. Angevine, Jr. (Mosby, 2000).

Neuroanatomy Workshop:

The workshop associated with this course meets on Wednesdays 11:30AM – 12:30PM in GR 4.301. It is designed to provide you with a study/review section for this course. Attending this workshop will help you keep up with the pace of the course and the course content. The teaching assistant will primarily run the workshop. Note that the workshop does **NOT** replace the regular class lectures, nor will it re-teach the lectures.

Exams and Assignments:

Exams: There will be two exams during the course. Each exam will be worth 50% of your final grade and will be cumulative. Material covered on the exams will be taken from the assigned readings and class lectures. The exams

will include multiple choice, short answers and simple diagrams as well as a point-out practicum requiring students to identify structures and their connections or function on projected slides of human brain sections. I strongly encourage you to form study groups to prepare for the point-outs portion of the exams. I will post slides to help you study for the exam/point-outs on the course website.

Grading Policy:

Grading is based on a set of a priori criteria: 90% correct for A's, 80% for B's, 60% for C's, and 50% for D's. The two exams will count 100% (50% each) of the grade. The workshop is a credit/no-credit course.

Course & Instructor Policies:

Missed exams: Make-up exams will be given only 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 an urgent family affair (e.g., funeral). In any of these cases, you must notify the professor in advance of the scheduled time of the exam (call and leave a voice-mail message if you can do nothing else). Otherwise, you will receive an F. It is the student's responsibility to make sure that an exam is made up within one week of the scheduled time. Note that make-up exams are designed to be more comprehensive to compensate for having more study time.

Attendance:

Your performance in this course will be greatly influenced by your attendance. Some material covered in lecture is not covered in the textbook. The point-out practicum part of each exam is comprised from the slides I use in class (some of them are **NOT** in the book).

Cell Phones, Pagers, Etc:

Please turn them off or if it rings step outside the classroom to answer it.

These descriptions and timelines are subject to change at the discretion of the Professor.

Date	Lecture Topics	Reading
January 8	Course Introduction	
January 10	Development of the Nervous System	Chapter 2
January 15	Martin Luther King Day – NO CLASS	
January 17	NO CLASS	
January 22	Gross Anatomy and General Organization of the CNS	Chapter 3
January 24	Meningeal Coverings of the Brain and Spine	Chapter 4
	Ventricles and CSF	Chapter 5
January 29	Blood Supply of the Brain	Chapter 6
January 31	Spinal Cord Organization Sensory Receptors and Peripheral NS	Chapter 10, 9
February 5	Sensory Receptors and Peripheral NS (cont.)	Chapter 9
February 7	Direct Motor Pathways	Chapter 18
	Autonomic NS	Chapter 10
February 12	Organization of the Brainstem	Chapter 11
	Cranial Nerves	Chapter 12
February 14	Cranial Nerves (cont.)	Chapter 12
February 19	Thalamus	Chapter 16
February 21	Brainstem Modulatory Systems	
February 26	Review	
February 28	Midterm Exam	
March 5	SPRING BREAK - NO CLASS	
March 7	SPRING BREAK - NO CLASS	
March 12	Indirect Motor Pathways: Cerebellum	Chapter 20
March 14	Indirect Motor Pathways: Cerebellum(cont)	Chapter 20
March 19	Indirect Motor Pathways: Basal Ganglia	Chapter 19
March 21	Indirect Motor Pathways: Basal Ganglia (cont)	Chapter 19
March 26	Auditory and Vestibular System	Chapter 14
March 28	Auditory and Vestibular System (cont)	Chapter 14
April 2	Visual System	Chapter 17
April 4	Taste and the Olfactory System	Chapter 13
April 9	Limbic System	Chapter 23
April 11	Limbic System (cont)	Chapter 23

April 16	Cortex and Higher Functions	Chapter 22
April 18	Cortex and Higher Functions (cont)	Chapter 22
April 23	Cortex and Higher Functions(cont) and Final Review	Chapter 22
April 25	Final Exam	

Student Conduct & 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 UTD publication, *A to Z Guide*, which is provided 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, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, 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).

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.

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 includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

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.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the

Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

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.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

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