

## Course Syllabus

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### **Neuroanatomy** NSC 4366

MW 1:00-2:15PM

GR 4.428

**Van Miller MD PhD**

JO 4.214

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*Office Hours: 2:30-4PM Monday and  
Wednesday and by agreement*

**For course-related communication, email must be sent through WebCT.**

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#### **Teaching Assistants:**

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#### **Course Pre-requisites**

Willingness to learn. NSC 3361 helpful.

#### **Co-requisites**

NSC 4066 (lab)

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#### **Course Description**

Functional Human Neuroanatomy (3 hours). Function of each major brain system as related to the organization of their principal nuclei. Function of each system related to the neurological disorders associated with disease specific locations.

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. It has a more clinical orientation than some Neuroanatomy courses. The overall objective of the course will be a three-dimensional understanding of nervous system structure and organization, based upon anatomical connections, system functions, and diseases that affect the brain.

#### **Lab Section:**

A 'lab' section (without a lab component) will be held each Friday 1:30-2:45PM in the classroom GR 4.428. These are optional, but they serve as the review for the tests; the TAs or I will review the basics of that week's lectures, and give clinical cases to consider. This will be excellent practice especially for the practicum exams, as you will see some of these slides again.

#### **WebCT**

To comply with FERPA regulations, all email discussions to and from me **MUST** be through WebCT. This is to protect your privacy. Discussion boards and Chat are available for your use. I will not routinely monitor them unless I receive complaints about inappropriate posting. Grades will be posted as soon as they are available.

Announcements will be made from time to time. In event of lecture cancellations due to the end of the world or March Madness, I will send emails to all in the class.

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## Learning Objectives:

After completing the course, students should be able to:

- 1.1 Describe the historical development of neuroscience as a cross-disciplinary science.
  - 1.2 Describe and analyze the contributions of anatomical, physiological, behavioral, pharmacological, developmental, and cell and molecular biological studies to the bases of neuroscience, and:
    - b) describe the basic morphology and functions of neurons and glia,
    - d) describe neural mechanisms of (1) motor control, (2) sensory processing, (3) homeostatic maintenance, and (4) higher cognitive functions (including learning, memory and emotions),
    - e) define and appropriately use anatomical terminology,
    - f) locate and identify major brain structures on brain atlas plates, MRI, CAT, and PET scans,
    - g) describe the anatomical and functional organization of the autonomic nervous system and neuroendocrine systems.
  - 1.3 Integrate pathological findings from psychology, psychiatry, physiology, and clinical neurology with basic scientific work in the neurosciences.
  - 2.1 Identify and explain why research questions rather than methods ideally drive advances in neuroscience.
  - 2.2 Describe how current methods sometimes limit our understanding of the nervous system, and drive innovation to develop new and better techniques.
  - 2.3 Describe why multiple research techniques and multiple levels of analysis (systems, network, cellular, synaptic, etc.) are preferred to address basic questions in the neurosciences, rather than reliance on a single technique or level.
  - 3.1 Compare textbook, popular and peer-reviewed scholarly reports in the neurosciences.
  - 3.3 Use critical thinking to analyze and critique the literature.
  - 4.2 Demonstrate effective oral communication skills in various contexts (e.g., group discussion, brief oral presentation) and for various purposes (e.g., informing, teaching, explaining, defending, persuading, deconstructing).
  - 5.2 Identify appropriate applications of neuroscientific knowledge in health, service, education, or business professions.
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## Required Textbook

Required readings are the appropriate chapter for the lecture.

*Essentials of the Human Brain*, John Nolte, (Elsevier), 2010.

## Suggested Course Material (ebook)

For consultation as needed for the clinical aspects of this course.

Davis, Larry E. *Fundamentals of neurologic disease* [electronic resource] : *an introductory text* / Larry E. Davis. Demos Medical Pub., 2005. This is available through the library's web site and at the library.

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## Assignments & Academic Calendar

		Nolte Chapter
1	Introduction / Overview	1,2
2	Coverings / Ventricles	4,5
3	Peripheral NS /CNS cells	1,10
4	Peripheral NS	10
5	Spinal Cord	9
6	Spinal Cord	9
<b>7</b>	<b>Practicum</b>	
<b>8</b>	<b>Test 1</b>	
9	Cranial nerves	3
10	Brainstem	12
11	Brainstem	11
12	Blood supply	15
13	Blood supply	6
<b>14</b>	<b>Practicum</b>	
<b>15</b>	<b>Test 2</b>	
16	Cerebellum	20
17	Limbic System	23
18	Hypothalamus	23
19	Basal ganglia	18
20	Basal ganglia	19
<b>21</b>	<b>Practicum</b>	
<b>22</b>	<b>Test 3</b>	
23	Thalamus	16
24	Visual system	17
25	Cerebrum	22
26	Cerebrum	22
27	Cerebrum	22
<b>28</b>	<b>Practicum</b>	
<b>29</b>	<b>Test 4</b>	

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## Grading Policy

**Exams:** There will be four exams during the course. Each exam will be worth 15% of your final grade. Material covered on the exams will be taken from the assigned readings and class lectures. These will focus on the location and clinical significance of relevant anatomical structures. The exams will be multiple choice questions. Bring scantron 229630 and your lucky pencil with you to these tests.

There will be four practica, “point-outs” requiring students to identify structures and their connections or function on projected slides of human brain sections or drawings. Each

practicum counts 5% of the final grade. Most of the practicum questions will be derived from the book. There is no final exam. I strongly encourage you to form study groups to prepare for the point-outs portion of the exam - quiz each other. Practice teaching it to others; that is the best way to learn anything.

The final 20% of the grade is class participation, which is recorded but not graded. Recall the wisdom of Woody Allen: "Ninety percent of life is just showing up".

### **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. In any of these cases, you must notify the professor in advance of the scheduled time of the exam via email to me. Otherwise, you will receive an F. The makeup will be given during the next Friday period after the test.

#### **Attendance:**

Your performance and grade 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 (most of them are **NOT** in the book).

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### **Usual Legal**

#### **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.

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