

# NSC 3361 Behavioral Neuroscience

## Fall 2013 Syllabus

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Office Hours: T/Th hours TBA and by arrangement

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Graduate TAs: (AM class) (PM class)

### Textbook

Required: *Brain & Behavior, 3<sup>rd</sup> ed., Garrett, 2011*. Many used paperback copies should be available via the bookstore and web. FYI: Though this book is listed as required, nearly all test questions come from lecture; use the book with this in mind. Do not overlook the web site for the textbook: [www.sagepub.com/garrett3e](http://www.sagepub.com/garrett3e)

### Tutoring, Extra help

Supplemental Instruction (SI) is offered for this course. SI sessions are free group study opportunities, scheduled three times per week. Sessions are facilitated by an SI Leader, who has recently taken the course and received a high final grade. Attendance is voluntary. For information about the days, times, and locations for SI sessions, refer to [www.utdallas.edu/studentsuccess/leaders/si.html](http://www.utdallas.edu/studentsuccess/leaders/si.html)

**Weekly lecture reviews** are another resource for you. These apply to the week's lectures - student TAs will discuss them and answer your questions. Their time and place will be announced on the first day of class.

### Course Content

This course has a strong 'clinical' orientation, as I am a pediatric neurologist. Every lecture will try to include examples from real patients (children and adults) with real neurological disorders. There is a **lot of new vocabulary** we need to learn to talk about the brain and behavior. The course begins with the study of nerve cells: their structure, the propagation of nerve impulses and transfer of information between nerve cells, the effects of drugs (legal and otherwise) on this process. We also examine the overall structure of the nervous system and its development. We will see how sensory systems such as vision, hearing, and motor systems control behavior. Finally, we will study sex, hunger and thirst, language, attention, sleep, mental illness, emotion, learning and memory. In one semester! Whew! Wear your seatbelt. Really.

### Student 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.
- 1.3 Integrate pathological findings from psychology, psychiatry, physiology, and neurology with basic scientific work in the neurosciences.
- 2.1 Identify and explain why research questions rather than methods ideally drive advances in the neurosciences.
- 3.1 Compare textbook, popular and peer-reviewed scholarly reports in the neurosciences.
- 5.1 Apply neuroscience concepts, theories, and research findings to issues in everyday life.
- 5.2 Identify appropriate applications of neuroscience knowledge in health, service, education, or business professions.

- 30.1 Describe basic components of the laws of nature as related to the brain.
- 30.2 Set up neuroscience problems in feasible and solvable ways.
- 30.3 Make reasoned arguments about major issues related to the nervous system.

## **Elearning**

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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 classroom emergencies, such as lecture cancellations for March Madness or World Cup games, I will send emails to all in the class.

## **Attendance and Readings**

Your performance in this course will be greatly enhanced by your attendance. A lot of material covered in lecture is not covered in the textbook, as they may be about patients I have seen or know about, and new findings as they are announced in the literature.

## **Assessment**

Exams: There will be three exams during the course, plus a cumulative final exam. Each exam will be worth 33% of your final grade and will cover the material from the third of the course preceding the exam. Thus, you may drop your lowest exam, even the final if desired. Material covered on the exams will be taken from the assigned readings and mostly from class lectures, as well as any additional material that I may provide. Exams will consist of multiple choice questions. Missed exams may be made up by taking the final. You will need scantron form 229630 or 229634 (the others don't work) and your luckiest pencil for each test.

Class attendance: Recall the wisdom of Woody Allen: "Ninety percent of life is just showing up".

Final Grades: A final grade will be submitted: A+ (98–100), A (90–97), B (80–89), C (60–79), D (40–59), F (< 40). Note that -/+ is not used except for A+.

## **Teaching Assistants**

For routine questions outside of class, please email the student TAs or graduate TAs. They will maintain office hours for questions and for reviews of tests, and other appropriate academic help. The student TAs are also a good sources for questions about course content, how to use elearning, the lecture slides, inside information about the tests, etc. The student TAs especially are to be consulted, because they have taken the same tests as you will be given. But I am available as well, either during office hours or by appt.

NSC 3361 Behavioral Neuroscience Spring 2013 Lecture and Reading Schedule

<b>Date</b>	<b>Lecture Topic</b>	<b>Lecture</b>	<b>Reading</b>
Week 1 (8/27,29)	Introduction	1	
	Neuroanatomy – Just the basics	2	Chapter 3
Week 2 (9/3,5)	Membrane Properties of Neurons; The Action Potential	3	Chapter 2
	Synaptic Transmission (Snap, Crackle, Pop)	4	Chapter 2
Week 3 (9/10,12)	Neuropharmacology (Drugs, Man)	5	Chapter 5
	“	6	“
Week 4 (9/17,19)	Brain Development (From Little Acorns ...)	7	Chapter 3
	“	8	“
Week 5 (9/24,26)	<b>Exam 1 (9/24)</b>		
	Sex (and the Single Brain)	9	Chapter 7
Week 6 (10/1,3)	Hunger, Thirst, Homeostasis (Eat, Drink, and be Mellow)	10	Chapter 6
	Emotions, Stress and Aggression	11	Chapter 8
Week 7 (10/8,10)	Audition and Language (Listen Up!)	12	Chapter 9
	“	13	Chapter 9
Week 8 (10/15,17)	“	14	Chapter 9
	Pain and Touch (‘This Might Hurt a Little Bit’)	15	Chapter 10
Week 9 (10/22,24)		16	Chapter 10
	Visual System (Look Here!) “	17	Chapter 11
Week 10 (10/29,31)	“	18	Chapter 11
	<b>Exam 2 (10/31)</b>		
Week 11 (11/5,7)	Motor Control (Why Tiger is so Much ...)	19	Chapter 11
	(...Better at Golf than You and I Are)	20	Chapter 11
Week 12 (11/12,14)	Rhythms of the Brain (Sleep)	21	Chapter 15
	Psychopathology (Xtreme Brains)	22	Chapter 14
Week 13 (11/19,21)	“	23	Chapter 14
	Learning and Memory (How To Win at College)	24	Chapter 12
Week 14 (12/3,5)	“	25	Chapter 12
	Learning and Memory	26	Chapter 12
Week 15 (12/10)	<b>Exam 3 (12/10)</b>		
<b>001: (TBA)</b> <b>005: (TBA)</b>	<b>Final Exam</b>		

Syllabus may be changed at any time during the course, as needed.

# University rules

## **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.