

Course Syllabus

Course Information

Course Number/Section	NSC 3361.501
Course Title	Introductory Neuroscience
Term	Spring 2017
Days & Times	FN 2.102 TR 5:30-6:45 PM

Professor Contact Information

Professor	Dr. Steve McWilliams
Office Phone	972-883-6785 (No voice mail; do not leave messages)
Email Address	All course-related communication must be sent through official UTD email/elearning. I am the 'section instructor'
Office Location	GR 4.714
Office Hours	TR 4:00-5:00 PM
Other Information	Course Web Site: UTD eLearning
Teaching Assistant	Justin Eroh
Email	jxe106020@utdallas.edu
Office hours	-by appointment only-

Course Pre-requisites, Co-requisites, and/or Other Restrictions

None

Course Description

This is an introductory course that explores the basic structure and function of the brain and spinal cord as well as nerves and their connections. This course includes an in-depth look at the principles of neurophysiology and the underlying processes responsible sensation, learning and memory, and behavior.

Course Content

To begin to understand human behavior and disease you must first understand how the brain works. Since this is an introductory neuroscience course, we will first examine nerves cells and their physiological processes including the propagation of nerve impulses and the transfer of information from one neuron to another. This will include a survey of basic neuroanatomy and the development of the nervous system. This will be followed by a study of the overall organization of the central nervous system including parts of the brain stem, spinal cord, and cranial nerves. We will then look at the sensory, motor, and integrative systems, followed by a look at several behavioral and mental disorders. Basic neuropharmacology will be discussed as it relates to the above mentioned topics.

In order to understand and communicate about the nervous system, there will be a lot of new vocabulary that you will need to learn!

Student Learning Objectives/Outcomes

After completing the course, students should be able to:

1. Identify and describe basic neuro-anatomical structures, lobes of the brain, and their major functions
2. Describe the differences between neurons and glia, their primary functions, and their physiological processes
3. Describe the physiological processes associated with neuronal conduction, communication, and the transfer of information from neuron to neuron

4. Display a basic understanding of neurochemistry and basic neuropharmacology as it relates to neuronal function and mental disorders
5. Identify and describe basic neurochemistry as well as specific neurotransmitters and their functions
6. Describe the anatomical structures and mechanisms associated with both sensory and motor systems at both the cellular level and system level
7. Describe the anatomical structures and associated mechanisms involved with cognition, behavior, and some psychiatric disorders

Required Textbooks and Materials

Neuroscience: Exploring the Brain, 4th Ed., Bear

Optional Course Materials (Not required!)

If you desire additional sources of information -*because you just can't get enough to read*- you can look at (1) *Essential Neuroscience* by Siegel, (2) *Neuroscience* by Purves, (3) *Foundations of Behavioral Neuroscience* by Carlson, and/or (4) *Principles of Neural Science* by Kandel.

AGAIN, THESE TEXTBOOKS ARE NOT REQUIRED FOR THE CLASS.

Grading Policy

Exams (100%): There will be four exams during the course and a comprehensive final exam. Each exam, including the comprehensive final, will be worth 20% of your final grade. Exams 1 through 4 will cover the material preceding the exam, while the comprehensive exam will cover any and all material presented throughout the course. The comprehensive final can also be used to replace a missed exam (See below.) That is, the comprehensive final may be counted twice- as your comprehensive final grade and as a missed exam grade. Questions on the exams will be taken from the assigned textbook readings, class lectures, as well as any additional material that I may provide. Exams will consist of multiple choice, matching, and true/false questions. **You will need scantron form 229630 and a pencil for each test.** Using the wrong scantron, not writing in your name and ID number correctly, or not bubbling-in your information correctly on the scantron may delay your grade being posted. Final grades are based on in-class exams only. No extra credit work will be given or accepted.

Final Grades: The plus/minus grading system is used in this course. A+ (97–100), A (94<97), A- (90<94), B+ (87<90), B (84<87), B- (80<84), C+ (77<80), C (74<77), C- (70<74), D+ (67<70), D (64<67), D- (60<64), F (< 60).

Course & Instructor Policies

eLearning and UTD email

All course information will be posted on eLearning. Grades will be posted as soon as possible. I will use eLearning to post announcements from time to time as well as any urgent changes to our class schedule including class cancellations should the need arise. All and any email correspondence related to the course **MUST** be sent through official UTD email/eLearning; I will not respond to emails sent via any outside email addresses.

Make-up exams

A missed exam may be replaced with the comprehensive final. No other make-up exam will be given for any reason.

Attendance and Readings

Learning about neuroscience can be a challenge even for the most studious student. Regular attendance and reading are vital to your understanding the subject. Your performance in this course will probably be affected by your attendance. **I will often emphasize particular parts of a chapter that I think are critical for your future studies. If you are not in class, you will not know what parts I have emphasized!** In addition, I may from time to time present material in lecture that

is not covered in the textbook. This will often include material designed to enhance your knowledge and peak your interest. This should encourage you to attend class and to keep up on your reading assignments.

Academic Support/Tutoring

The Student Success Center offers Supplemental Instruction (SI) for this course free of charge. Study sessions are lead by an SI leader, someone who has taken the class and done well, and are held weekly. Sessions start during the second week of classes and are voluntary; there is no need to sign up. For details such as days and times and other additional information check <http://www.utdallas.edu/studentsuccess/leaders/si.html>

Your class TA is a good source of information and can be very helpful if you are having trouble in the class with regard to understanding the material. Teaching Assistants (TA) are graduate students with a good degree of knowledge about the material you are being given; many of them have taken this class. Please feel free to email your TA at anytime during the semester or to speak with him/her before or after class. His or her contact information is listed above.

Elearning

To comply with FERPA regulations, **all email discussions to and from me MUST be through elearning**. This is to protect your privacy, and to keep me organized. 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 may be made from time to time.

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.

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

Assignments & Academic Calendar

Week	Topic	Reading
Jan 9	Introduction to Neuroscience / Neurons and Glia	Chapters 1 & 2
Jan 16	The Neuronal Membrane at Rest	Chapter 3
Jan 23	The Action Potential / Synaptic Transmission	Chapters 4 & 5
Jan 30	Follow-up & Review (Tue)/Exam I (Thur Feb 2nd)	
Feb 6	Neurotransmitter Systems	Chapter 6
Feb 13	The Structure of the Nervous System (Basic Neurodevelopment and Neuroanatomy) See Appendix starting on page 219	Chapter 7
Feb 20	The Eye / The Central Visual System	Chapters 9 & 10
Feb 27	Follow-up & Review (Tue)/Exam II (Thursday March 2nd)	
Mar 6	The Somatic Sensory Systems	Chapter 12
Mar 13	No Classes- Spring Break	
Mar 20	Spinal Control of Movement / Brain Control of Movement	Chapters 13 & 14
Mar 27	Chemical Control of the Brain and Behavior	Chapter 15
Apr 3	Follow-up & Review (Tue)/Exam III (Thursday 6th)	
Apr 10	Mental Illness	Chapter 22
Apr 17	Wiring the Brain / Memory Systems	Chapters 23 & 24
Apr 24	Learning and Memory (Tue) Follow-up & Review (Thur 27th)	Chapter 25
May 3-9	Exam IV and Final Exam (Day & Time TBA)	