

Course Syllabus

Introductory Neuroscience

Dr. Steve McWilliams



Course #/Section # NSC 3361.003
Term Spring 2025
Days/Times/Room MW 08:30-09:45am FN 2.102
Class Format This class meets in-person. There's NOT an online or asynchronous option for this class. Lectures will NOT be recorded or posted.

I WANT VERY MUCH FOR YOU TO SUCCEED!

College-level classes require, even demand, a certain level of maturity and responsibility on the part of the student. This means you the student take your classes and your education seriously. This typically means you attend class regularly and put the time needed to study- even if your social life must be put on pause sometimes. Students who come to class and study on a regular basis tend to do better than students who do not. I, as a teacher, can only teach you what you want to learn. Help me, help you, reach your goals!

Dr. SM

Professor Contact Information

Email Address All course-related communications must be sent to me at steven.mcwilliams@utdallas.edu from your UTD email account. When emailing, please include your class in subject line, so that I know who you are...I teach more than one class! Do not leave voice messages.

Office Location GR 4.714

Office Hours MW 10:00 11:00 am (Please email to set up an individual meeting- if necessary)

General Course Information

Course Pre-requisites, Co-requisites, and/or Other Restrictions: None

Course Description and Content: This course explores the nature of the brain processes underlying basic neurobiology and behavior, including basic neurophysiology, the physiology of movement and sensation, learning and memory, emotion, and behavioral disorders. This course is designed to introduce students to the brain and behavior as well as to provide a foundation for those pursuing degrees in the various areas of neuroscience, including psychology, cognition, and child development. In this course, we will briefly examine nerves cells and the transfer of information from one neuron to another. This will include a survey of basic neuroanatomy and the chemistry of the brain. This will be followed by a study of the different sensory systems, hormones, biological rhythms, cognitive processes, and psychopathology. death.

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

Textbooks: Mind's Machine by Watson & Breedlove (4th or 5th edition is okay)

Exams/Quizzes/Attendance/Course Policies /Grading:

Exams (80%): There will be four exams during the course. All exams are weighted equally. Exams will cover the material preceding the exam, and therefore are not comprehensive in design. No exam grade will be dropped. You will have 75 minutes to complete each 50-question (multiple-choice/true-false) exam. All exams must be completed in class during regularly scheduled class days and times. **YOU WILL NEED TO BRING A LAPTOP TO CLASS ON EXAM DAYS TO ACCESS THE ONLINE EXAM. All exams WILL REQUIRE UTD's Lockdown Browser to access.** You can download the software using the following link: <http://www.respondus.com/lockdown/information.pl?ID=353814262>. Make sure your laptop is functioning properly before coming to class to take the exam! You are not allowed to use any other electronic device during testing, nor are you allowed to leave during the exam for any reason unless preapproved by the instructor.

Quizzes (20%): A 10-question weekly quiz will be posted on the Course Homepage on eLearning at the end of each week that will cover the material for that week. The quiz will become available starting Friday and will remain available through the end of the day Monday. You will have 15 minutes to complete each online quiz. Your highest ten quiz grades will be totaled and averaged into your final course grade. Quizzes **MUST** be completed within the allotted time window- no exceptions! No make-up quizzes!

Attendance: Although I do not take weekly regular attendance, **I will randomly take attendance for an in-class quiz grade to be added to your final quiz average. You must be present -in class- to receive the attendance quiz grade.** This is to encourage you to come to class! Regular class attendance is strongly recommended. Students who fail to participate in class regularly are inviting scholastic difficulty.

Regarding ILLNESS, LATE TO and MISSED EXAMS:

Although we all wake up at times not feeling well, sometimes it's best to get up anyway and avoid getting behind in class. No makeup exam will be given unless **PREAPPROVED BY THE INSTRUCTOR**. Prior notification of instructor, for example just sending me an email, does not imply or grant approval. **The only possible excuse for missing an exam (without prior notification and approval) is that you were either hospitalized at the time of the exam (with an IV in your arm or you are unconscious) or jailed the day of the exam** (I probably don't want to know why). Prior approval for missing an exam is typically only given for (1) the need to attend an official UTD event for which you are an official UTD member (proof required), or (2) an immediate emergency involving you are an immediate family member (proof of emergency is typically required) (An immediate family member is defined as a spouse, parent, sibling, or your children **ONLY**). If granted a makeup exam, the instructor reserves the right to use a different exam from that given to the class. **It is the student's responsibility to contact Course Instructor to schedule a day and time to make-up the missed exam.** Any exam not completed by the last week of regular classes will be given a grade of zero. No other make-up exams will be given. **Students are expected to be on time at the start of the exam. If you show up late, you may not be allowed to take the exam. If a student is late to an exam and is given approval to start the exam, the student MUST complete the exam at the same time the class is scheduled to end the exam, unless preapproved by the instructor.** (Plan ahead for possible delays such as traffic issues!) Before using "covid" as an excuse, please note, a positive covid test done at home does not automatically excuse you from an exam. Documentation must include a clinic/hospital visit (that day or prior) and a note from a physician stating/confirming the illness (that day). I do not give extra credit work- so please don't ask.

Final Grades: The plus/minus grading system is used in this course. A+ (97–100), A (94-96), A- (90-93), B+ (87 - 89), B (84 - 86), B- (80 - 83), C+ (77 - 79), C (74 - 76), C- (70 - 73), D+ (67 - 69), D (64 - 66), D- (60 - 63), F (59 or below)

UT Dallas Syllabus Policies and Procedures

Information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please see <https://go.utdallas.edu/syllabus-policies> for these policies. Information contained in the following link constitutes the University's policies and procedures on student conduct and academic integrity. Please see

OSA/ADA: It is the policy and practice of The University of Texas at Dallas to make reasonable accommodation 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 this course, please discuss it with your professor and allow one-week advance 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 OSA for a confidential discussion. OSA is located in the Student Services Building, SSB 3.200. They can be reached by phone at 972-883-2098, or by email at studentaccess@utdallas.edu.

Assignments & Academic Calendar (The information contained here is subject to change)

Date	Day	Topic	Reading
Jan 20	M	No Class (UTD classes start Tuesday Jan 21 st)	
	W	Course Orientation and an "Introduction to the Brain"	PPT Postings
Jan 27	M	Basic Science Review for the Neuroscience Student	PPT Postings
	W	Basic Science Review for the Neuroscience Student	PPT Postings
Feb 3	M	The Nervous System	Chapter 2/PPTs
	W	Neurons of The Nervous System	Chapter 2/PPTs
Feb 10	M	Neuroanatomy (major brain structures and functions)	Chapter 2/PPTs
	W	Neuroanatomy and Neurodevelopment (just the basics)	Chpt. 13 partIII/PPTs
Feb 17	M	Exam I	
	W	<i>(Learning and Test-Taking Skills)</i>	
Feb 24	M	Neurophysiology (concentration gradients and diffusion)	Chapter 3/PPTs
	W	Neurophysiology (membrane potentials and electromotive driving forces)	Chapter 3/PPTs
Mar 3	M	Neurophysiology (graded potentials and action potentials)	Chapter 3/PPTs
	W	Neurochemistry (transduction at the synapse)	Chapter 4/PPTs
Mar 10	M	The Chemistry of Behavior (basic pharmacology)	Chapter4/PPTs
	W	Exam II	
Mar 17	M	Spring Break	
	W	Spring Break	
Mar 24	M	The Sensorimotor System (sensory transduction)	Chapter 5/PPTs
	W	The Sensorimotor System (motor system and movement)	Chapter 5/PPTs
Mar 31	M	Vision (basic anatomy and visual transduction)	Chapter 7/PPTs
	W	Vision (visual transduction and visual receptive fields)	Chapter 7/PPTs
Apr 7	M	Vision (brain processing of visual information)	
	W	Neuroendocrine system (hypothalamus and pituitary gland)	Chapter 8/PPTs
Apr 14	M	Hormones and Homeostasis	Chapter 8&9/PPTs
	W	Exam III	
Apr 21	M	Biological Rhythms and Sleep	Chapter 10/PPTs
	W	Emotions, Aggression, and Stress	Chapter 11/PPTs
Apr 28	M	Psychopathology (behavioral disorders and current treatments)	Chapter 12/PPTs
	W	Psychopathy	Chpt. 12(&11)/PPTs
May 5	M	Memory and Learning	Chapter 13/PPTs
	W	Exam IV	
		<i>May 12-16 final exam week (no meeting for this class)</i>	