NSC 3361 Introduction to Neuroscience
Fall 2017 Syllabus

Van Miller MD PhD

Office: Jonsson 4.214
Phone 972-883-4229 (no voice mail)
Office Hours: *M noon -12:50 and W 1 PM - 2 PM and other times by agreement*
Email van.miller@utdallas.edu *For course-related communication, email should be sent through elearning*

Graduate TA: Michelle Kapolowicz - mrk092020@utdallas.edu
Undergrad TAs:

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.

Textbook
Recommended: *The Mind's Machine* 2/e by Watson and Breedlove: ISBN13: 978-1605352763
FYI: nearly all test questions come from lecture; use the book with this in mind. Do not overlook the web site for the textbook: https://2e.mindsmachine.com

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

Weekly lecture reviews are another resource for you. These apply to that week's lectures - student TAs will discuss them and answer your questions. The review session immediately after each test will be a test review.

Individual review: You are welcome and indeed encouraged to meet with me or one of the student TAs during office hours to go over difficult concepts and discuss learning strategies. You must help us to help you. The day before the test is too late; make it a regular weekly thing.

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.

Elearning

Class lecture slides are posted on elearning. No portion of these slides may be sold, retransmitted, reposted, duplicated or otherwise used without the express written approval of the author. 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, golfing, or World Cup games, I will send emails to all in the class.

Turning Point Clickers

This course uses a classroom polling software Turning Point Cloud. In order to participate in the polling, you need to purchase a Turning License, available at the UTD Bookstore.

For this course, you need either an RF-LCD device (clicker) **or** the Turning Point Cloud app. Please check with the Bookstore for details. Visit http://www.utdallas.edu/elearning/resources

Assessment

Exams: There will be three exams during the course, plus a cumulative final exam. Each exam will be worth 33.3% 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 your Comet card and your luckiest pencil for each test. We will supply the scantron sheet.

Extra-credit: Clicker grading; You receive 2 points for every correct clicker question answer, and 1 point for every incorrect answer. For the final clicker grade computation, I will average the top three students' total clicker points and set that as 100%. So, if the top three students earned 130, 129 and 128 points, 100% is the average of these: 129. If you scored 112 total points, then your grade for the clickers is 112/129: 87%, and you receive 5 x .87 = 4.5 points added to your final course grade.

Final Grades: A final grade will be submitted: A+: 97-100%, A: 93-96.9%, A-: 90-92.9%, B+:87-89.9%, B: 83-86.9%, B-: 80-82.9%, C+: 74-79.9%, C: 68-73.9%, C-: 60-67.9%, D: 50-59.9%, F < 50.

Class attendance: Recall the wisdom of Woody Allen: "Ninety percent of life is just showing up". Your class participation affects your grade.

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 apt; I come to class early nearly every time to meet with you. No advance notice required.

NSC 3361 Fall 2017 Lecture Schedule

		Lecture Topic	Class	Reading B&B
	Week 1	Introduction	1	
		Neuroanatomy – Just the basics	2	Chapter 3
	Week 2	Membrane Properties of Neurons; The Action Potential	3	Chapter 2
		Synaptic Transmission (Snap, Crackle, Pop)	4	Chapter 2
	Week 3	Neuropharmacology ('Drugs, Man')	5	Chapter 5
		"	6	"
	Week 4	Brain Development (From Little Acorns ...)	7	Chapter 3
		" (… Big Oaks Grow)	8	"
	Week 5	**Exam 1**	9	
		Sex (and the Single Brain)	10	Chapter 7
	Week 6	Hunger, Thirst, Homeostasis (Eat, Drink, and be Mellow)	11	Chapter 6
		Emotions, Stress and Aggression	12	Chapter 8
	Week 7	Pain and Touch ('This Might Hurt a Little Bit')	13	Chapter 9
		"	14	Chapter 9
	Week 8	Audition and Language (Listen Up!)	15	Chapter 9
		"	16	Chapter 10
	Week 9	"	17	Chapter 10
		Visual System (Look Here!)	18	Chapter 11
	Week 10	"	19	Chapter 11
		Exam 2	20	
	Week 11	Motor Control (Why Tiger is so Much …)	21	Chapter 11
		(…Better at Golf than You and I Are)	22	Chapter 11
	Week 12	Rhythms of the Brain (Sleep)	23	Chapter 15
		Psychopathology (Xtreme Brains)	24	Chapter 14
	Week 13	"	25	Chapter 14
		Learning and Memory (How To Win at College)	26	Chapter 12
	Week 14	"	27	
		"	28	Chapter 12
		Exam 3	30	
		Final Exam		

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

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.