Advanced Medical Neuroscience (BMED 4280-02) Spring 2017

Instructor: Maria Teresa Castaneda M.D.P.h.D

Fridays 10:50 -12:30 (BLHSB 1.410)

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Office Hours : Monday 9-11:30
Thursday 9-10:30

Course Description:

This course is designed to understand advances systems in neuroscience. Students are expected to develop an appreciation for modern hypotheses of brain function and of the problems that contemporary systems neuroscience seeks to address.

Some of class resources of this were obtained from the website of the Society for the Teaching of Psychology (STP) <http://teachpsych.org/.

In this class we are going to implement activities into the classroom that engage student in cooperation rather than competition , (Jig saw classroom) one example of this is students are divided into teams or "expert groups," which are each assigned a topic or part of a lesson. Students first learn their topic and then assemble into jigsaw groups to teach their fellow classmates. Using Active Learning to Teach Advance neuroscience encourages listening, engagement, and empathy by giving each member of the group an essential part to play in the academic activity.

Group members must work together as a team to accomplish a common goal, each person depends on all the others. No student can succeed completely unless everyone works well together as a team. TBL The main purpose of TBL is to change the classroom experience from acquiring course content and concepts in a lecture-based format to applying course content and concepts in a team format.

In other words, students spend their classroom time applying course materials rather than simply

acquiring it. In a TBL course, classroom learning occurs in teams of 5 to 7 students. In this area, students will observes video learning activities and clinical cases.

Acting , will be one of the activities of TBL, we are going to use this activity to promote: Confidenc, Public Speaking and Teamwork. Through performances, rehearsals and class exercises, acting requires the ability to collaborate with others and to work as a team. From learning the basics of the trade to perfecting your skills and performances. Having experience in working as a helpful member of a team can translate into success in countless other aspects of your life in addition to acting.

Educational Objectives/ Goals:

- Understand functional brain anatomy and physiology
- Understand concepts in sensory neuroscience such as receptive fields, maps, labeled lines, and Neurons network processing.
- Understand how reflexive and voluntary movements are generated.
- Understand the methods and approaches used to analyze neural systems.
-understand function of emotion center and higher brain functions.
- Understand the biological bases of some brain disorders.

How to succeed in this class.

- Read the assigned readings before class. The most important way to make sure you get valuable use out of class time is to walk in the door with some background and basis for understanding the material. Every class will include a quiz at the beginning of the presentation.
- Come with questions about the readings. It is vitally important to everyone's success in the class that we spend as much of the lecture time going over the most interesting and challenging concepts
- Be prepared for a quiz any day. There will be between 3 and 6 pop quizzes during the course. They will cover a mix of material, before the class presentation.
-Attending class is the most important thing that you can do to be successful in this class, this couns in your final grade.
- Ask questions in class. Whether these are for clarification, repetition, or because you're interested and want to know more.
-In this course you are going to do practical activities in relation with the topics.

Grading

30% Exam 1
30% Exam 2
20% Quizzes

20% Attendance and activities during class.

Textbook: Not assigned

On line resources: Lecture slides are available for registered students on Blackboard.

TEXTBOOK AND/OR RESOURCE MATERIAL

The following materials, and many others, are included: * Neuroscience online website. http://neuroscience.uth.tmc.edu.

* Neuroscience; A Science of the Brain: An Introduction for Young Students British Neuroscience Association. Brain McMaster website. http://brain.mcmaster.ca/BrainBee/Neuroscience.Science.of.the.Brain.pdf.

* Neurochemistry. Intech Open website. http://www.intechopen.com/books/neurochemistry. Accessed May 9, 2016.

Absence/Make-up policy: Students are expected to attend all classes. Make-up exams will not be given. A grade of zero will be given for missing any exam. If you are late in every day classes, it is going to reduce the 20% of attendance and activities.

Unit I Introduction to Neurophysiology	1.-Anatomy of the Nervous System - Morphology of the neuronal cell & Cellular and Molecular Biology of the Neuron.	January 20
	2.-Signaling within neurons & Ion channels and membrane potentials	January 27
	3.-Neurotransmitters release. Synaptic transmission & Synaptic plasticity	February 3
UNIT II Brain and body	4.-Somatosensation I: Periphery Somato sensory II: Cortex & plasticity Somatosensory II: Pain	February 10
	5.-Motor Units and Muscle Receptors, Spinal Reflexes and Descending Motor Pathways, Motor Cortex.	February 17
	6.-Basal Ganglia, Cerebellum, Disorders of the Motor System,	February 24
	EXAM,	March 3
UNIT III Special senses, transmission.	7.-Special Sesnses I: Chemical Senses: Olfaction and Gustation, Vestibular System: Structure and Function, Vestibular System: Pathways and Reflexes, Dysfunction, common pathologies.	March 10
	SPRING BREAK	March17

	8.-Special Senses II, Auditory System: Structure and Function, Auditory System: Pathways and Reflexes	March 24
	9.-Special Senses III Visual Processing: Eye and Retina, Visual Processing: Cortical Pathways,	April 7
UNIT IV Autonomic Control and Higher Brain Function	10.-Hypothalamus: Structural Organization, Hypothalamic Control of Pituitary Hormones, Central Control of the Autonomic Nervous System & Thermoregulation,	April 14
	11.-Central Control of Emotions:Feeding Behavior, Limbic System: Hippocampus, Limbic System: Amygdala,	April 21
	12.-Learning and Memory, Higher Cortical Functions: Language, . Higher Cortical Functions: Association and Executive Processing, CNS Aging and Alzheimer's Disease,	April28
	13.- Reticular System Activation: Sleep. Epilepsy Substance Abuse Disorder, Drug addiction	May 5
	FINAL EXAM	May 12

Etiquette , Courtesy, **professionalism.**

Please turn off your cell phones or electronic devices before coming to class.
Recording the lecture through audio or video is forbidden.
Computers may be used in class for the purpose of personal note taking only.
Students are expected to refrain from playing games, watching movies, listening to CDs, or doing other work during class.

As is a new method of teaching, please follow next recommendation:

You must be arriving to class on time; paying attention during short lectures; attentive watching and listening to screenings of films, songs, or other media; except presentation related to lecture, respectful listening when I or your peers are speaking; your ability to be fully engaged in your learning specially with team activities. If you are unable to meet the above criteria, I will take away participation points throughout the semester.

I take attendance. If I have begun class by the time you enter, you should make sure that I

counted you as present by checking with me after class, but after 15 minutes you are alow to be in the classroom but it will counted as un-attendance. (o).

Important Dates

Spring 2017 Term (January 17 – May 11) Nov. 1 (Tues.)	Registration Begins – Graduate Students
Nov. 14 (Mon.)	Registration Begins – Undergraduate Students
Jan. 11 (Wed.)	Payment Due
Jan. 13 (Fri.)	Waitlist Ends Last day to withdraw (drop all classes) for a 100% refund
Jan. 16 (Mon.)	Martin Luther King Jr. Holiday. No classes.
Jan. 17 (Tues.)	Spring classes begin. Official First Class Day.
Jan. 17 – Jan. 23 (Tues. – Mon.)	Period to withdraw (drop all classes) for an 80% refund
Jan. 30 (Mon.)	Last day to add a class or register for Spring classes
Jan. 24 – Jan. 30 (Tues. – Mon.)	Period to withdraw (drop all classes) for a 70% refund
Jan. 31 – Feb. 6 (Tues. – Mon.)	Period to withdraw (drop all classes) for a 50% refund
Feb. 1 (Wed.)	Census Date (*Last day to drop without it appearing on the transcript*)
Feb. 7 – Feb. 13 (Tues. – Mon.)	Period to withdraw (drop all classes) for a 25% refund
Mar. 13 – Mar. 18 (Mon. – Sat.)	Spring Break. No classes.
April 13 (Thurs.)	Last day to drop a class (grade of DR) or withdraw *(grade of W)*
April 14 – April 15 (Fri. – Sat.)	Easter Holiday. No classes.
May 4 (Thurs.)	Study Day. No classes.
May 5 – 11 (Fri. – Thurs.)	Final Exams
May 12 – 13 (Fri. – Sat.)	Commencement Exercises
May 15 (Mon.)	Grades Due

STUDENTS WITH DISABILITIES:

If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at accessibility@utrgv.edu. Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at accessibility@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD:
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Online evaluations will be available Students who complete their evaluations will have priority access to their grades.

ATTENDANCE:
Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV's attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.
SCHOLASTIC INTEGRITY:
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.
SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:
In accordance with UT System regulations, your instructor is a "responsible employee" for reporting purposes under Title IX regulations and so must report any instance, occurring during a student's time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

COURSE DROPS:
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the "3-peat rule" and the "6-drop" rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.