Honors Introduction to Neuroscience, NSC 3361.HN1

Class Information
Class Time: Tuesdays & Thursdays 5:30-6:45pm
Class Location: Remote; instruction will be provided on Microsoft Teams and eLearning
Term: Fall Semester, 2020

Professor Contact Information
Professor: Dr. Eva LaDow
Office Phone: 972.883.3526
Other Phone: 415.244.1126 (cell phone)
Email Address: eva.ladow@utdallas.edu
Office Location: GC 1.220C (please note no in-person student meetings will be held in Fall 2020)
Online Office Hours: Fridays 1:30pm-2:30pm, and by appointment.

Course Modality and Expectations

Instructional Mode	**Remote.** Some course material will be provided in a synchronous manner during class time (see Lecture Format and Academic Calendar below).
Course Platform	Live Sessions- Class will meet during in Microsoft Teams on our class channel. Course materials will be available on our class location on elearning.utdallas.edu. If technical difficulties are encountered on Microsoft Teams, an alternative meeting platform is the eLearning Collaborate classroom accessed via our class location on eLearning.
Expectations	**1.** Students are expected to fully participate in the class per guidelines below. **2.** When attending synchronous sections, students are expected to behave as they would in a face-to-face situation. Do not text, participate in side conversations, or browse the Internet during class. **3.** Students who are unable to attend synchronous class meetings will be expected to watch recordings of those sessions, participate in discussion boards, and contact the professor at least one week in advance of scheduled exams to arrange an asynchronous exam time, if needed.
Asynchronous Learning Guidelines	Students who elect to take this course asynchronously, or change to asynchronous learning at any point in the semester, will be expected to participate and arrange their exams as per the guidelines below. https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/

Class Participation
Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Recordings
Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate

University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Materials
The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

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

Course Description
This course serves as an introduction to the field of neuroscience. It is a survey of neurobiology from the cellular building blocks to the brain regions and processes that underlie vision, hearing, language, sex, emotion, hunger, thirst, and more. We'll also discuss psychoactive drugs, mental illness, and how we learn and remember.

Learning Objectives
Students will describe the anatomy and organization of the nervous system as it relates to a number of important physiological processes and behaviors. Students will describe the basic cell biology and pharmacology of the nervous system, with a focus on synaptic transmission. Students will apply this knowledge to analyze how perturbing specific brain regions or neurotransmission may alter behavior. Students will also describe central principles of behavioral neuroscience such as homeostasis and plasticity.

After taking this course, students will be able to:

- Describe the historical development of neuroscience as a cross-disciplinary science.
- Identify and describe basic neuroanatomy and functional divisions of the central and peripheral nervous systems.
- Describe the differences between neurons and glia, their primary functions, and their physiological processes
- Describe the physiological processes associated with neuronal conduction, communication, and the transfer of information from neuron to neuron.
- Identify and describe basic neurochemistry as well as specific neurotransmitters and their functions.
- Describe basic principles and components of neurochemistry and neuropharmacology as it relates to neuronal function and mental disorders.
- Describe the anatomical structures and mechanisms associated with both sensory and motor systems at
- both the cellular level and system level.
- Describe the anatomical structures and associated mechanisms involved with cognition, behavior,
- and some psychiatric disorders
- Integrate pathological findings from psychology, psychiatry, physiology, and neurology with basic scientific work in the neurosciences.
- Apply neuroscience concepts, theories, and research findings to issues in everyday life.

Required Textbooks
The Mind's Machine: Foundation of Brain and Behavior, 3rd Ed by Breedlove and Watson.

Suggested Course Materials

Online resources- In addition to the textbooks themselves, Sinauer publishers provides free student resources such as chapter summaries, interactive study tools, animations, and so on. These resources for The Mind's Machine can be found at The Minds Machine 3e Student Resources. Activities of particular relevance the lecture material are listed. These resources are either short (less than 5min long) videos, animations, readings, or interactive activities.

Academic Calendar

Date	Lecture Topic	Exams or Live Session	Assignments	Book Chapter(s)	Online Resources
18-Aug	Introduction	Introduction			
20-Aug	Neuroanatomy I		H1 Posted	Ch.2	Activities 2.2-2.11
25-Aug	Neurons & Morphology	How Form Follows Function	H1 Due	Ch.2	Activity 2.1
27-Aug	Membrane Potential, The Action Potential		H2 Posted	Ch.3	Activity 3.1, Animations 3.3, 3.4
1-Sep	Synaptic Transmission I	Excitability of Neurons	H2 Due	Ch.3	Animations 3.4, 3.5
3-Sep	Electrical vs Chemical Synapses		H3 Posted, Review Qs Posted	Ch.3	A Step Further 3.1 and 3.2, Animations 3.5-3.6
8-Sep	Molecules Involved in Synaptic Transmission	From Synapses to Networks, Exam Review	H3 Due	Ch.3	Animation 3.7, Ch.3 Summary
10-Sep		**Exam I**			
15-Sep	Neuropharmacology I: Neurotransmitters	Diversity of NTs and their Receptors		Ch.4	Activity 4.1, Video 4.1
17-Sep	Neuropharmacology II: Drugs		H4 Posted	Ch.4	Animation 4.4
22-Sep	Drugs of Abuse and Addiction	Current Topics in Substance Use Disorder	H4 Due	Ch.4	Ch.4 Summary
24-Sep	Brain Evolution		H5 Posted		
29-Sep	Neurodevelopment	How Humanity Developed	H5 Due	Ch.13	Activities 2.6, 13.3, Animations 13.5 and 13.6, Video 13.6
1-Oct	Hormone signaling		H6 Posted, Review Qs Posted	Ch. 8	Animation 8.3, Animation 8.4
6-Oct	Circadian rhythms and sleep	Exam Review	H6 Due	Ch. 10	A Step Further 10.1, Animations 10.3 and 10.4
8-Oct		**Exam II**			
13-Oct	Sensory Processing I	Principles of Sensory Processing, Pharmacology of Pain		Ch. 5	Animation 5.3
15-Oct	Sensory Processing II & Pain		H7 Posted	Ch. 5	

20-Oct	Visual System	Where do illusions happen?	H7 Due	Ch. 7	Video 5.1, A Step Further 7.1, Activity 7.1, Animation 7.4
22-Oct	Visual System II		H8 Posted	Ch. 7	Animation 7.3, A Step Further 7.2
27-Oct	Audition and Language I	Hearing and language disorders	H8 Due	Ch. 6	Animation 6.3, Animation 6.4, Video 6.1, A Step Further 6.1 and 6.2
29-Oct	Audition and Language II		H9 Posted, Review Qs posted	Ch. 15	Video 15.1, Video 15.3, Video 15.4, Activity 15.1a-c
3-Nov	Motor Control	Exam Review	H9 Due	Ch. 5	Animation 5.4
5-Nov		**Exam III**			
10-Nov	Hunger, Thirst, Homeostasis			Ch. 9	Activity 9.1, Animation 9.3
12-Nov	Emotions, Aggression & Stress	Consequences of Stress		Ch. 11	Video 11.3
17-Nov	Psychiatric and Neurological Disease		H10 Posted	Ch. 12	Activity 12.1, Video 12.1, Video 12.3
19-Nov	Learning & Memory I	Dementia	H10 Due	Ch. 13	Activity 13.2
24-Nov	Learning and Memory II	The Fragility of Memory, Exam Review	Final Review Qs Posted	Ch. 13	

Final Exam Date and Time: TBA

Lecture Format
All lectures will be presented in asynchronous, pre-recorded format. A pdf of the PowerPoint slides will also be posted to eLearning.

Synchronous Sessions
Live sessions during our assigned class time will be held on Microsoft Teams as per the syllabus, usually once per week. These live sessions will begin with Dr. LaDow presenting material relevant to the previous lectures. Questions and discussion will follow. These live sessions will be recorded for those unable to attend synchronously. If a live session is not listed on the syllabus, there is no synchronous meeting that day. Class time may also be used for scheduled exams, as per the syllabus (see below in Exams section).

Discussion Boards
In addition to the live sessions, discussion boards for each lecture will be available for students to ask questions of each other, and of the professor. For those taking the course asynchronously, participation in weekly discussion boards will be required to receive participation credit for that week. All students, whether or not they are taking the course asynchronously, are encouraged to participate in discussion boards.

Grading Policies
Your grade for the course will be based on attendance, participation, homework completion, and exams.
The grading scale for letters from percentages will be as follows: A+: 97-100%, A: 93-96%, A-: 90-92%, B+:87-89%, B: 83-86%, B-: 80-82%, C+: 77-79%, C:73-76%, C-: 70-72%, D: 60-69%.

The contribution of each assignment/exam toward the final grade is as follows: Participation- 5%, Homework- 5%, Exam I- 21%, Exam II- 21%, Exam III- 21%, Final Exam- 27%.

Participation- Each week, every student must participate in either the synchronous teaching session or the discussion boards to receive attendance and participation credit for that week. Participation for the live session will be counted if a student logs in and participates at least once in the discussion or Q&A. Participation in the discussion board will be counted if the student asks one substantive question, one substantive comment, or provides an accurate answer to a question another student posts.

Homework- Each homework assignment will be a short (usually 1-2 pg) handout with problems or questions related to the previous weeks' material. Grades will be based on completeness and effort*, not correctness*. Answer keys will be provided on eLearning so students may self-grade their homework. Self-grading is an excellent review exercise. Homework is due at the beginning of class time (5:30pm) on Tuesdays as per the calendar.

Exams- Exams will be given via eLearning. The date and time of each exam will be during our assigned class time on the date listed on the syllabus. If you are unable to take the exam as listed on the syllabus, you must contact me one week in advance so I may make other arrangements. Emergencies or illnesses that preclude exam-taking at the last minute must be documented.

This year, UT Dallas has contracted with Honorlock to provide a secure online proctoring tool for taking exams remotely. The intent of using Honorlock is to prevent students from using external materials (notes, cell phones, audio recordings) or having others in the room when taking their exam. To successfully take an exam, you must have a web camera with microphone, a laptop or desktop computer (no tablets/phones), Chrome browser, a reliable internet connection and your photo ID. You will be prompted to install the Honorlock Chrome Extension (which you can remove after you finish the test). You will then access the exam within your eLearning course and go through the authentication process. The web camera will monitor you throughout your test. Please see the Testing Guidelines and Support Information for additional information.

Review questions- In advance of exams, a longer set of review questions will be posted to eLearning. These will not be turned in for grading; they are for student review and practice only. They are meant to supplement the homework questions as a study guide for upcoming exams.

Course and Instructor Policies

Class Citizenship: Bring the appropriate course reading and notes with you to synchronous meeting sessions. Be respectful of your classmates. When attending synchronous sections, students are expected to behave as they would in a face-to-face situation. Do not text, participate in side conversations, or browse the Internet during class. Class is short; cell phones and social media are distracting.

Late work: Late work will be accepted only in documented emergency situations, and at the discretion of the professor

Extra credit: There are no extra credit opportunities in this class.

Additional Information about Online/Distance Learning

Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

Course Access and Navigation

This course can be accessed using your UT Dallas NetID account on the eLearning website.
Please see the course access and navigation section of the Getting Started with eLearning webpage for more information.

To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication
This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources
Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

Server Unavailability or Other Technical Difficulties
The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

COMET CREED
THIS CREED WAS VOTED ON BY THE UT DALLAS STUDENT BODY IN 2014. IT IS A STANDARD THAT COMETS CHOOSE TO LIVE BY AND ENCOURAGE OTHERS TO DO THE SAME:

"AS A COMET, I PLEDGE HONESTY, INTEGRITY, AND SERVICE IN ALL THAT I DO."

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.