

BIOL 6311/5311
Fall Semester 2021
Neurobiology of Brain Diseases

Instructor: Kyung-An Han, Ph. D.
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Hours: by appointment
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Class Meetings: 6:00 PM - 7:20 PM, MW

Classroom: Physical Science Bldg Room 222A

Course Objectives: The objective of this course is to provide contemporary knowledge and insights into the genetic, molecular, cellular and neural basis of brain diseases. The course will focus on the brain disorders that are prevalent in our society as listed below.

Topics to be covered

Overview on the nervous system and neurophysiology
Overview on the brain
Alzheimer's Disease
Parkinson's Disease
Huntington's Disease
Prion Disease/CJD
Overview on brain development
Autism Spectrum Disorders
Depression
Learning and memory disorders - ADHD, mental retardation (RTS) and PTSD

Text: A general textbook – e.g *Neuroscience* (Purves et al., Sinauer Associates, 2017 or other Ed) or *Human Anatomy & Physiology* (Elaine N. Marieb & Katja Hoehn, Pearson Benjamin Cummings, 2018 or other Ed) - is recommended for background information on CNS functions and anatomy. Readings on review and primary research papers on selected topics will be provided.

Examinations and grading:

Take home comprehensive exam:	40% of the grade (20% on Exam 1 and 20% Exam 2)
Essay assignment:	20% (due on November 8 M)
Paper discussion and presentation	20%
Homework	10%
Review assignment:	5% (due on November 22 M)
Class participation	5%

Exams consist of short-answer and essay questions and will be open-book tests.

Essay assignment is a compare/contrast critique of two (BIOL5311) or three (BIOL6311) current primary literatures on the topics covered in this course (detailed instructions will be given separately). The essay will be reviewed and graded by your classmates (**Review assignment**) in addition to myself.

Paper discussion is on research papers on the diseases that are covered in the class (one paper on AD, one paper on PD, etc.) and all students will present part of a selected paper.

Paper presentation is on a research article on the disease that we cover and was published within the past two years (**paper selection** per my feedback). 3 slides total - 1 slide on title and authors, question/objective of the study, &

approaches; 1 slide on key findings using one or two key figures; 1 slide on conclusions/limitations/impact/next steps presentation; 5 min presentation followed by 5 min class Q/A and feedbacks

Final grades will be assigned as follows: A=90-100, B=80-89, C=65-79, D=50-64, F=0-49

If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148 or by email to cass@utep.edu, or visit their office located in Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

Academic Dishonesty and Expected Behavior: Students at UTEP are expected to behave in a manner that supports the integrity of the academic system. **Cheating, plagiarism and collusion are unethical and prohibited, and will result in disciplinary action.** Violations will be reported to the Dean of Students. A zero tolerance policy for plagiarism will be applied. For more information, please check the web site: www.plagiarism.org

PLAGIARISM/ACADEMIC DISHONESTY STATEMENT: **Plagiarism is using information or original wording in a paper without giving credit to the source of that information or wording: it is also not acceptable.** Do not submit work under your name that you did not do yourself. You may not submit work for this class that you did for another class. **If you are found to be cheating or plagiarizing, you will be subject to disciplinary action, per UTEP catalog policy.** <http://www.utep.edu/dos/acadintg.htm> for detailed information.

Course Schedule

Lectures	Topic
1-3	Introduction Overview on the nervous system and neurophysiology (ref: any <i>Neuroscience</i> or <i>ANP</i> textbook)
4-5	Overview on the brain (ref: any <i>Neuroscience</i> or <i>ANP</i> textbook)
6-9	NG Introduction, Alzheimer’s Disease and FTD (review articles posted in blackboard)
10-14	Parkinson’s and Huntington’s Diseases (review articles)
Oct 18 M	Comprehensive take home Exam: Due by Midnight Oct 20 W
15-17	Prion diseases (review articles)
18-21	Neurodevelopment & Autism Spectrum Disorders (review articles)
22-25	Depression (review articles)
26-27	Learning & Memory (LM: ADHD, RTS, PTSD) (review articles posted)
Dec 1 W	Comprehensive take home Exam: Due by Midnight Fri Dec 3

The schedule is subject to change. Please check Blackboard regularly for changes or important announcements.

COVID-19 PRECAUTION STATEMENT

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org.

COVID-19 vaccination and mask wearing are strongly encouraged.