

BIOL 5311/6311
Fall Semester 2016
Neurobiology of Brain Diseases

Instructor: Kyung-An Han, Ph. D.
Office: 3.152 Biosciences Building
Hours: by appointment
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Class Meetings: 6:00 PM - 7:20 PM, MW

Classroom: Liberal Arts Bldg 204

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

Topics to be covered

Overview on the nervous system – neurophysiology
Overview on the CNS – brain and spinal cord
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., 3rd or 4th Ed, Sinauer Associates, 2004/2011) or *Human Anatomy & Physiology* (Elaine N. Marieb & Katja Hoehn, 8th or later Ed, Pearson Benjamin Cummings, 2010) - 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:

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|--------------------------|---------------------|
| 1 st exam: | 25% of the grade |
| 2 nd exam: | 25% |
| Paper assignment: | 25% (due on Nov 2) |
| Review assignment: | 10% (due on Nov 23) |
| Paper presentation | 10% |
| Attendance/Participation | 5% |

Exams will mainly consist of short-answer and essay questions, and will be open book tests. A paper (due on **Nov 2**) is a compare/contrast critique of three current primary literatures on the topics covered in this course (detailed instructions will be given separately). The papers will be reviewed and graded by your classmates in addition to myself. Paper presentation is a group effort with each group consisting of 2 students. Topics and format will be discussed in the class. Final grades will be assigned as follows: A=90-100, B=80-89, C=70-79, D=60-69, F=0-59

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.

Course Schedule

| Lectures | Topic |
|----------|--|
| 1-3 | Introduction The Nervous System – overview, neurophysiology (ref: any <i>Human Anatomy & Physiology</i> textbook) |
| 4-5 | The Central Nervous System (ref: any <i>Human Anatomy & Physiology</i> textbook) (note: no class on the labor day holiday September 5) |
| 6-9 | NG Introduction, Alzheimer's Disease and FTD (review articles posted in blackboard) |
| 10-14 | Parkinson's and Huntington's Diseases (review articles) |
| 14-15 | Group Presentations |
| 16 | First Exam: Lectures 1 – 14 (up to HD) Oct 17, 6-8 pm |
| 17-18 | Prion Disease (review articles) |
| 18-21 | Neurodevelopment & Autism Spectrum Disorders (review articles), essay due on Nov 2 |
| 22-24 | Depression (review articles) |
| 24-27 | Learning & Memory (ADHD, RTS, PTSD) (review articles posted) essay review due on Nov 23 |
| 27-28 | Group Presentations |
| 29 | Second Exam: Lectures 17-27 (up to L/M) Dec 7, 7-9 pm |

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