

PSY304: Biopsychology: An Introduction to Human Neuroscience Spring 2010 Class Syllabus

Instructor: Cliff Kentros, PhD

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Office hours: Monday/ Weds 3:20-4pm or by appt.

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Liza TBA

Lecture: 2:00-3:20pm Mon/Weds

Discussion Sections:

General Course Description: This class provides an initial exposure to one of the most fascinating subjects of modern scientific inquiry: neuroscience, or the study of how nervous systems control behavior. It begins with a superficial discussion of some of the intrinsic properties of neurons, the cells that enable information flow through the nervous system, and then how they talk to each other. We then put neurons together and begin to discuss the circuits underlying higher-order phenomena such as sensory perception, motor action, and cognition, but we tend to stay away from subjects that are well-represented by other classes. There are 3 basic modules, 1) cellular; 2) systems, and 3) cognitive and clinical neuroscience, roughly corresponding to the content of the midterm and final exams.

| Week | Date | Topic | Reading | Discussion Section |
|-------------|--------------|---|------------------|---------------------------|
| 1 | March 29 | History of Neuroscience | Chapter 1 | Movie: TBA |
| | March 31 | Neuronal structure & function | Chapter 2 | |
| 2 | April 5 | The Neuronal Membrane at Rest | Chapter 3 | Modeling the membrane I |
| | April 7 | The Action Potential | Chapter 4 | |
| 3 | April 12 | The Action Potential | | Exam Review |
| | April 14 | Synaptic Transmission | Chapter 5 | |
| 4 | April 19 | Neurotransmitter Systems | Chapter 6 | Exam Retake |
| | April 21 | Exam #1 | | |
| 5 | April 26 | Structure of the Nervous System | Chapter 7 | Neuroanatomy I |
| | April 28 | The Somatic Sensory System | Chapter 12 | |
| 6 | May 3 | Visual System | Chs 9, 10 | Neuroanatomy II |
| | May 5 | Chemical, Auditory, Vestibular | Chapter 8, 11 | |
| 7 | May 10 | Motor Control | Chs 13, 14 | Exam Review |
| | May 12 | Hypothalamus etc. | Chapter 15 | |
| 8 | May 17 | Sex, Rhythms, & Sleep | Chapters 17, 19 | Exam Retake |
| | May 19 | Exam #2 | | |
| 9 | May 24 | Limbic System I: Emotion | Chapter 18 | Neuroanatomy III |
| | May 26 | Plasticity and Memory | Chapter 23, 24. | |
| 10 | May 31 | Learning and Memory | Chapters 24, 25. | <i>Exam Review</i> |
| | June 2 | Neurological and Psychiatric Conditions | Chapter 22 | |
| 11 | 15:15 June 8 | <i>Final Exam!!!</i> | TUESDAY | |

Course Outline: The preceding is only a working draft of the course outline; it will be revised as the quarter progresses. Depending upon how the class as a whole is doing, the schedule of material may be refined. Dates on which particular topics are to be presented in lecture can be subject to change, as may reading assignments, etc. However, we will not change the dates of exams. The official updated version of the outline will reside on the Blackboard web site. Updated print versions can also be obtained from the instructors or teaching assistant during normal office hours.

Communication: I will be happy to entertain any and all questions during my scheduled office hours, which happen twice a week, directly after class. Furthermore, if somehow none of these times can work for you, we can set up an appointment for another time. Also, remember your TAs can handle most questions via email or office hours.

Required Text: *Neuroscience: Exploring the Brain* by Bear, Connors and Paradiso ([a copy is on reserve in the Knight Library](#) and the Science library; please notify me immediately if you have difficulty obtaining the text from the bookstore). This is an excellent textbook, but is admittedly at a higher level than should be expected for a class without prerequisites (there really is no introductory neuroscience textbook), so concentrate your efforts on understanding what has been presented in lecture. The publishers of this text also provide an online tutoring service free with the purchase of the textbook (see the inside front cover for details). However, although most everything has been excellent thus far, note that since this site is run by the publisher, we cannot take responsibility for the material presented there.

Course Website: The official course website is on Blackboard (<http://blackboard.uoregon.edu>), if you are registered, you should see it. Please notify one of the instructors if you have difficulty logging into the site. This site will provide supplemental information for the course. The lectures may change depending upon how things are going.

Optional Text/Weblinks: As *optional* reading on the subject, try *Biological Psychology* by James Kalat or *Biopsychology* by John P.J. Pinel ([copies are on reserve in the Knight Library](#)). You can also get more neuroscience-related information at the following web sites:

<http://www.brainconnection.com>

<http://www.neuroguide.com>

<http://faculty.washington.edu/chudler/introb.html>

<http://www.hhmi.org/senses>

<http://www.mindhacks.com/>

http://ect.downstate.edu/courseware/neuro_atlas/

<http://www.drugfree.org/Portal/DrugIssue/>

<http://www.newscientist.com/channel/being-human/brain>

<http://blogs.nature.com/nn/actionpotential/>

If you know of other web sites of interest, please pass them along to the instructor.

Course Format: The material in this course will be presented through a combination of assigned reading from the text, class lectures, and demonstrations and discussion. Lecture material and readings will have some overlap, but will not be replications of each other; some lecture material will not be covered in the readings and vice versa. You are expected to do the assigned reading *before*

the corresponding lecture. Your understanding of the material during lecture will be more fruitful if you have at least a general acquaintance with the material beforehand, helping you to ultimately comprehend and retain the material. That being said, the vast majority of exam questions come from the lecture material, which is available on the Blackboard site the night before the lecture.

Grading: Grading will be based on the combined scores from the discussion participation (10%), your two midterm exams (25% each), the weekly quizzes (10%), and your final (30%). Letter grades will be determined as follows: A (90 - 100% of total possible points), B (80 - 89%), C (70 - 79%), D (60 - 69%), F (0 - 60%). However, we reserve the right to relax (but not stiffen) this criterion, depending on the actual distribution of grades.

Quizzes: Small, short tests to celebrate Mondays with. These are more for my benefit than yours, so everyone gets three free 100% and we take the best 7 scores from the rest. However, even though the grade impact is trivial, if you bomb a quiz, it is a sign that you should get help.

Discussion/participation (10% of final grade): Scores will be determined by class participation (discussion, questions, etc.) and attendance, as well as the scores of any assignments.

Midterm Exams (each 25% of your grade) The two midterm exams will be composed of multiple choice, matching, fill-in-the-blank and short answer questions. Not only is there a review, you have the opportunity to take the exam again during the discussion section, and I will take the better of the two scores. Because of this, ***no make-up exams will be given without evidence of a valid medical or family emergency***, so *if you know in advance that you cannot take all exams at the appointed times (see the course schedule below), do not take this course!* If such unforeseen circumstances during the term prevent you from taking an exam, notify an instructor immediately, PRIOR to the exam.

Final Exam (30% of your grade) This one is cumulative, with a disproportionate amount taken from the modules after the last midterm. But it will look in many ways like the exams you have taken before, and there is a review before it.

Extra Credit: Occasionally, there may be opportunities for extra credit that will be assigned in exams. However, they can only help you, not hurt you. Depending upon how the class as a whole is doing, there may be a little extra credit available near the end, and I am currently inquiring about human subjects pool extra credit.

Academic Learning Services: If you have difficulty with the course materials at any time, you are encouraged to contact the instructors or TA so that we can provide timely assistance. In addition, the resources of the Academic Learning Services (<http://als.uoregon.edu/services/services.html>) can be invaluable to students that require assistance in, for example, perfecting good study habits or honing their writing skills.

Students with Disabilities: If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with the instructor as soon as possible. Also, please request that the Counselor for Students with Disabilities (Molly Sorois, disabsrv@uoregon.edu, 164 Oregon Hall, Phone 346-1155, TTY 346-1083) send a letter verifying your disability. For a list of resources provided by the Office of Disability Services, please see <http://ds.uoregon.edu/resources.htm>.

Students for whom English is a Second Language: If you are a non-native English speaker and think you may have trouble in this course due of language difficulties, please see the instructors as soon as possible to make any necessary special arrangements.

Academic Honesty: All work submitted in this course must be your own. For the consequences of academic dishonesty, refer to the Schedule of Classes published quarterly. Violations will be taken seriously and are noted on student disciplinary records. If you are in doubt regarding any aspect of these issues as they pertain to this course, please consult with the instructor before you complete any relevant requirements of the course. (For more information, see the UO web site regarding academic honesty at: <http://darkwing.uoregon.edu/~conduct/>).