

Biopsychology

Psychology 304

CRN: 15344 (4 credits)

MW 12:00-1:20 pm in 240C MCK



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Labs: Th 12:00-1:20 in 112 ESL (CRN: 15346)
 Th 2:00-3:20 in 112 ESL (CRN: 15345)
 F 12:00-1:20 in 275 LIL (CRN: 15347)
 F 2:00-3:20 in 175 LIL (CRN: 15348)

Course Description

On the University of Oregon Seal, there is a phrase in Latin that says “*Mens Agitat Molem*”, which can roughly be translated as “The mind moves matter”. In this course, however, we will examine how the opposite is also true – that is, how “matter can move the mind”. What is this matter? The short answer is: three pounds of meat. That’s enough for a small dinner party if you’re buying a roast, or a Quarter-Pounder for you and each of eleven of your closest friends. But three pounds of meat can also hold a lifetime of memories, emotions, thoughts and desires. In this course, we will explore the brain, the three pounds of meat that make us who we are. To understand the workings of the brain, we begin by exploring the cells, or neurons, that make up the brain – their structure and function, with a focus mostly on the ways in which these neurons “communicate” with one another using electrical currents and chemical signals. We also discuss how the chemical interaction between neurons is affected by drugs (those prescribed by a doctor, as well as those that aren’t...), so that we can better understand their behavioral effects and associated benefits (and dangers). We also study the anatomy of the brain and the way in which different functions are segregated within the tissue. We then explore many of these functions in depth, including, for example, Sensation (vision, touch, hearing, taste, smell), Learning and memory (which provides a means of storing and later recalling new-found information), Reproductive behavior (which is – well, you know what *that’s* for...), Sleep (which might seem to be a time when the brain simply shuts down, but in reality is a time when the brain is highly active), and Emotions (which modulate our behavior and interactions with others). Finally, we discuss what happens when things go wrong in the brain – lesions due to trauma or stroke, developmental disorders like Down Syndrome and autism, degenerative disorders like Alzheimer’s and Parkinson’s Disease, schizophrenia, and depression, to name a few. The course assumes no prior knowledge of biology or neuroscience – the only prerequisite is a desire to learn how a piece of meat can think, act and feel.

Required Text

The Mind's Machine by Watson & Breedlove (please notify me immediately if you have difficulty obtaining the text from the bookstore).

Optional Weblinks

You can get more neuroscience-related information at the External Links directory in the Blackboard site, or at the following web sites:

<http://brainconnection.positscience.com/>
<http://faculty.washington.edu/chudler/introb.html>
http://ect.downstate.edu/courseware/neuro_atlas/
<http://www.newscientist.com/topic/brain>
<http://www.mindhacks.com/>
<http://www.neuroguide.com>
<http://blogs.nature.com/nn/actionpotential/>
<http://www.drugfree.org/drug-guide>
<http://www.erowid.org/psychoactives/>

Blackboard

The official course website is on Blackboard (<http://blackboard.uoregon.edu>). Please notify the instructor or GTF if you have difficulty logging into the site. This site will provide supplemental information and materials for the course (lecture slides, study guides, grades, etc.).

Course Format

The material in this course will be presented through a combination of assigned reading from the text, class lectures, and in-class/in-lab videos, 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. Reading the material before the corresponding lectures will help your performance in two ways. First, discussions of the material during lecture will be more fruitful if you have at least a general understanding of the material beforehand, helping you to ultimately comprehend and retain the material. Second, questions drawn from the assigned readings will be included on the regularly scheduled quizzes, *even if they have not yet been discussed in lecture (see below)*.

Grading

Grades will be based on combined scores from exams, quizzes, and lab work (detailed below). Note that no work of any kind will be accepted after Friday, December 12th of finals week. Final grades in the course will be assigned based on your total percentage points in the course (i.e., your total points/total points possible):

GRADE	PERCENTAGE		GRADE	PERCENTAGE
A+	99-100%		C	72-77.9%
A	92-98.9%		C-	70-71.9%
A-	90-91.9%		D+	68-69.9%
B+	88-89.9%		D	62-67.9%
B	82-87.9%		D-	60-61.9%
B-	80-81.9%		F	59.9% and Below
C+	78-79.9%			

Course Points

Lecture (280 points)

Quizzes: 30 points
 Midterm 1 Exam: 75 points
 Midterm 2 Exam: 75 points
 Final Exam: 100 points

Lab (70 points)

Lab Participation: 10 points
 Lab Assignments: 20 points
 Lab Quiz 1: 20 points
 Lab Quiz 2: 20 points

Total Points Possible: 350

Course Components

Quizzes (30 points):

Short quizzes will occasionally be given in class. Although these quizzes are usually scheduled for the first lecture of each week, there may be a few exceptions (see the course calendar, below). Quizzes will contain 3 multiple-choice questions that pertain to the recently presented lecture material and the readings from the text. Questions will occasionally be drawn from readings that have been assigned but have not yet been discussed in lecture (even those due the day of the quiz); however, these questions will be of a more general nature and should be easily answered if you have read the material. Of the seven quizzes (each worth 6 points), the two with the lowest scores will be dropped, with the total score of the remaining five quizzes counting toward your final grade (30 points total). ***No make-up quizzes will be offered***; if you miss a quiz, that grade will be one of the two that will be dropped.

Exams (250 points):

There will be three exams throughout the term, two midterms and a final exam (see course calendar for specific dates). The midterm and final exams will be composed of multiple-choice, matching, fill-in-the-blank and short answer questions. The final exam will contain questions drawn from the entire course, but with a greater focus on material covered since the second midterm. ***No make-up exams will be given without evidence of a valid excuse, and the final cannot be taken earlier or later than the time listed in the University final exam schedule - 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 unforeseen circumstances during the term prevent you from taking an exam, notify the instructors immediately.

Lab (70 points):

Lab scores will be determined by lab participation (attendance, discussion, etc.), assignments, and quizzes. Lab participation will be assessed at the end of the term by the lab instructors.

Lab Assignments: Four of the weekly lab sections will be spent doing hands-on activities and demonstrations. Lab assignments for each of these labs will be passed out and collected at the end of the lab. Each assignment is worth 5 points (4 total). See the 'Lab attendance' section below if you miss a lab assignment and would like to make one up.

Lab Quizzes: There will be two lab quizzes throughout the term. The first lab quiz (week 4) will be based on identifying brain anatomy, while the second lab quiz (week 8) will be based on identifying eye anatomy. Each lab quiz is worth 20 points and will consist of 10 questions in which you must identify an anatomical structure being shown.

Lab Review Sessions: To help you better prepare and study for the final, review sessions for the exams will be (i.e., the week before the exam is scheduled).

Lab Attendance: Attendance at the review sessions is optional, but *to receive full credit for the lab participation portion of the final score, you must attend all of the sessions in which hands-on demonstrations is performed (i.e., on weeks 1, 2, 5, and 6)*. If you are unable to attend the lab section in which you are enrolled, you may attend one of the other sections (space permitting). However, if circumstances in your life make it impossible to attend any lab on a given week, you may do a make-up assignment for the missed lab. Please contact the instructor for further details, but note that **only one make-up assignment is allowed**. If you find that you will be missing two or more labs throughout the term, please notify the instructor as soon as possible to discuss other possible remedies.

Extra Credit (5 points):

For extra credit (up to 5 points), you can complete a short response paper. The response paper will entail writing a short response (at least 2 pages, 12 point font, double spaced, 1 inch margins) to a neuroscience-related journal article, event (e.g., talk), or case study. Please contact the instructor if you would like to pursue this option, as topics/events must be approved in advance. Note that you are only allowed to complete **one extra credit assignment**, worth up to 5 points.

Course Expectations

Academic Honesty: All work submitted in this course must be your own. Violations will be taken seriously and are noted on student disciplinary records. If you are in doubt regarding any aspect of academic honesty as it pertains to the course, please consult with the instructor before you complete any requirements of the course. (For more information, see the UO web site for academic honesty: <http://uodos.uoregon.edu/StudentConductandCommunityStandards/StudentConductCode/tabid/69/Default.aspx>).

Academic Responsibility: Attendance is critical to earning a good grade for the course. I do not take roll in lecture, however, it is very important that you show up to class to participate. This class will be guided by University Policies that entail a standard of responsibility, honesty, and integrity for me, your classmates, and the work that you do. This also means you should do your absolute best to attend every class meeting, and to come to class prepared and ready to participate in our discussions. There will be topics in lecture that may not be in the textbook, and there will be exam questions based on lecture material and therefore, attendance is critical to doing well in the course.

Student Accommodations

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

Accessible Education Center (AEC): 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 a counselor at the Accessible Education Center (uoaec@uoregon.edu, tel. 541-346-1155) send a letter verifying your disability. For a list of resources provided by the Accessible Education Center, please see <http://aec.uoregon.edu>.

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 to language difficulties, please see the instructor as soon as possible to make any necessary special arrangements.

Course Calendar for Lecture

Week	Date	Lecture Topic	Chapter Readings	Exams/ Quizzes	Lab Topic
1	Sept. 29	An Introduction to Brain and Behavior	CH. 1	Quiz 1 (take home)	Video
	Oct. 1	Cells and Structures	CH. 2	Quiz 1 due	
2	Oct. 6	Cells and Structures	CH. 2	Quiz 2	Brains
	Oct. 8	Neurophysiology	CH. 3		
3	Oct. 13	Neurophysiology	CH. 3	Quiz 3	Review
	Oct. 15	The Chemistry of Behavior	CH. 4		
4	Oct. 20	Midterm Exam 1 Chapters 1, 2, & 3		Midterm 1	Lab Quiz 1 (brain)
	Oct. 22	The Chemistry of Behavior	CH. 4		
5	Oct. 27	Vision	CH. 7	Quiz 4	Cells/ Eye Dissection
	Oct. 29	Vision	CH. 7		
6	Nov. 3	Vision	CH. 7	Quiz 5	Prisms
	Nov. 5	Hormones and Sex	CH. 8		
7	Nov. 10	Hormones and Sex	CH. 8	Quiz 6	Review
	Nov. 12	Biological Rhythms and Sleep	CH. 10		
8	Nov. 17	Midterm Exam 2 Chapters 4, 7, & 8		Midterm 2	Lab Quiz 2 (eye)
	Nov. 19	Biological Rhythms and Sleep	CH. 10		
9	Nov. 24	Emotions, Aggression, and Stress	CH. 11	Quiz 7	Holiday: No Lab
	Nov. 26	Emotions, Aggression, and Stress	CH. 11		
10	Dec. 1	Memory, Learning, and Development	CH. 13		Final Exam Review
	Dec. 3	Memory, Learning, and Development	CH. 13		
Finals Week	Wed., Dec. 10, 10:15 am	Final Exam Comprehensive, with emphasis on Chapters 10, 11, & 13		Final Exam	No Lab

* Note that the column for 'Lab Topic' corresponds to the topics for the labs held on Thursday and Friday