

# Biopsychology (PSY 304)

University of Oregon

Summer 2017

Mon – Thurs: 10:00 – 11:20

177 LA ♦ 4 credits ♦ CRN: 41882

Prerequisite: PSY201

<b>Instructors:</b>	Melissa Moss	Jeff Peterson
<b>Offices:</b>	340/350 LISB	232 LISB
<b>Email:</b>	<a href="mailto:uobiopsych@gmail.com">uobiopsych@gmail.com</a>	

**General Course Description:** How does the brain, a mass of biological tissue, give rise to our perceptual experiences, our emotions, and our ability to interact with the environment? To understand the workings of the brain, we begin by exploring the cells (i.e. 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 we can better understand their behavioral effects. 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 (particularly vision), which allows us to discover things about the world around us.
- ♦ Learning and memory, which provides a means of storing (and later recalling) that new-found information.
- ♦ Reproductive behavior, which is – well, you know what *that’s* for...
- ♦ Emotions, which modulate and color 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.

**Course Goals:** By the end of this course you should be able to:

- ♦ Identify neural structures and anatomical subdivisions of the nervous system, explain neural communication, and discuss how chemicals affect neural processing;
- ♦ Describe how our underlying physiology influences a wide range of human behaviors;
- ♦ Reflect on course topics and apply of the information you learned to your own lives;
- ♦ Understand (with appropriate skepticism) neuroscience-related reports in the popular press.

**Communication:** The best way to reach us outside of class is via email. Send your emails to the course address listed above and we will do our best to respond within 48 hours. If you prefer to meet in person to discuss an issue or to look over an exam, please contact us with your availability to schedule an appointment.

**Required Text:** *The Mind’s Machine, 2<sup>nd</sup> Ed.*, by Watson & Breedlove, Sinauer Associates, Inc. Please notify us immediately if you have difficulty obtaining the text from the bookstore. Supplemental material for the textbook (including practice quizzes) can be found at <http://2e.mindsmachine.com> (when registering for the site, you will need to enter the instructor’s email address as jpeters7@uoregon.edu).

**Course Website:** The official course website is on Canvas (<http://canvas.uoregon.edu>). Please notify the instructors if you have difficulty logging into the site. This site will provide supplemental information for the course (syllabus, course outline, grades, images from the lecture, study guides, etc.).

**Optional Websites:** You can get more neuroscience- and research-related information in the External Links module on the Canvas 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://ect.downstate.edu/courseware/neuro_atlas/)

<http://www.neuroguide.com>

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

<http://science.howstuffworks.com/>

<http://www.newscientist.com/topic/brain>  
<http://eyewire.org/>

<http://retractionwatch.com/>

### Interesting Podcasts:

*Radiolab, The Infinite Monkey Cage, Science Friday, Science Vs, Stuff You Should Know*

If you know of other websites or podcasts of interest, please pass them along to the instructors.

---

**Course Format:** The material in this course will be presented through a combination of assigned reading from the text, class lectures, and in-class 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:** Grading will be based on the combined scores from participation (10%), quizzes (10%), two midterm exams (25% each), and the final exam (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%); +’s and –’s will also be assigned (e.g., 90 – 93 = A–; 93 – 97 = A; 97 – 100 = A+). However, the instructors reserve the right to relax (but not stiffen) these criteria, depending on the actual distribution of grades.

**Participation (10% of final grade):** Participation points will be determined by homework completion, class attendance, and active engagement (discussion, questions, etc., within class activity).

**Quizzes (10%):** Short quizzes will be given in class daily (excluding exam days). Quizzes will contain 3-5 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. The two lowest quiz score will be dropped, with the average score of the remaining six yielding 10% of the final grade (1.67% per quiz). ***NO make-up quizzes will be offered for ANY reason;*** if you miss a quiz, that grade will be one of the two that are dropped.

Additionally, one question from each quiz will reappear on the exam that covers the relevant chapter. For example, one question from the quiz on chemistry of behavior will appear on the second midterm exam. The question on the exam might not be an *exact* duplicate of the question as it appeared on the quiz, though it will be very similar. Quiz answer keys will be posted on the course Canvas site to serve as additional study material.

**Exams (Midterm #1: 25%, Midterm #2: 25%, & Final: 30%):** The midterm and final exams will be composed of multiple choice, matching, fill-in-the-blank and short answer questions. Each exam will include some questions from the daily quizzes. The final exam will contain questions drawn from the entire course, but with a greater focus on material covered since Midterm #2. ***No make-up exams will be given without evidence of a valid excuse, and the final exam 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 your instructors *immediately*.

**Extra Credit (up to 4 points):** Up to 4 extra credit points can be earned. Each point will be added to your *final grade in the course* up to the maximum of 4 points. For example, completing 4 points of extra credit would increase your final grade of 78 up to an 82, giving you a B- for the course instead of a C+.

**Option 1:** Students interested in extra credit can serve as subjects in the Psychology Human Subjects Pool. The Human Subjects Pool is designed to provide students the opportunity to see firsthand how psychology experiments are performed; at the same time, you'll be providing data that will help a researcher learn how the brain works. If you decide to participate, you will earn 1 point of extra credit for each hour you serve as a subject, up to a maximum of 4 points (credits beyond the maximum of 4 will not be counted). To participate, follow the guidelines for the Human Subject Pool posted at <http://psychology.uoregon.edu/research/human-subjects-pool/>. Since it is impossible to predict the number of experiments that will be available on any given week, we suggest that you *do not wait until the end of the term* before participating. Note that it is your responsibility to faithfully follow the rules of Human Subject Pool, as described in the link above. If you do not follow these rules, you will be penalized, in the form of a subtraction from your already-completed extra credit. **If you have any questions or comments about this extra credit assignment, do not hesitate to contact your instructors.**

**Option 2:** Students who prefer not to participate in the Psychology Human Subjects Pool can instead collect extra credit by writing a short paper on a topic within Biopsychology. This may include finding a relevant popular media article or choosing a podcast episode from those posted on Canvas then writing a short summary/reflection paper (1-2 pages, double-spaced). Each response paper is worth 2 extra credit points. Media articles must be approved by the instructors prior to writing the reflection paper. **If this is your preference, please contact your instructors to discuss the details of the requirement.**

---

**Classroom climate:** It is our goal that you feel comfortable and respected – both by us and your peers – in this class. Please let us know if we or other students make you feel uncomfortable, so that appropriate corrections can be made. If you feel that you or someone else has been the victim of bias in this class, you may consider contacting the Bias Response Team ([bias.uoregon.edu/index.html](http://bias.uoregon.edu/index.html)).

**Classroom Etiquette:** Students in large classes often believe they are invisible, that they will not be noticed, and that one's individual behavior does not matter. *This is not true!* You can make a difference by listening attentively, asking questions, and contributing to discussions. Just as actively engaged students have a positive influence on the classroom environment, activities like talking to your neighbor, texting, coming late, leaving early, personal grooming, reading the newspaper, loud yawns, sleeping, surfing the web, or cell phone use can be extremely disruptive. PLEASE make sure that you and your fellow students get the most from this course by abstaining from such activities. Cell phone use (for texting, calls, or web surfing) is prohibited (also, please silence your ringer before each class). Laptops can be used only for taking notes (no web surfing, checking Facebook, etc.), and they are highly discouraged even for that purpose. If we find that your activities are distracting us or your fellow students, we will call you out on it, and repeated warnings will be accompanied by dismissal from the course.

**Students Needing Accommodations for Accessibility:** If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with us as soon as possible. Also, please request that a counselor at the Accessible Education Center ([uoaec@uoregon.edu](mailto:uoaec@uoregon.edu), tel. 541-346-1155) send a letter verifying your disability and needed accommodations. For a list of resources provided by the Accessible Education Center, please see [aec.uoregon.edu](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 us as soon as possible to make any necessary special arrangements. If you think you may need to use a dictionary for in-class exams, you must ask to have your dictionary checked by the instructors prior to the exam. Electronic dictionaries are not permitted.

**Academic Honesty:** All work submitted in this course must be your own. Violations (cheating on exams, turning in work that is not your own, etc.) will be taken seriously, and will be noted on student disciplinary records. If you are caught cheating, you will receive a 0 on the assignment; you may also receive a failing grade for the course. If you are in doubt regarding any aspect of these issues as they pertain to this course, please consult with the instructors before you complete any relevant portion of the course. For more information, see the UO web site regarding student conduct, <http://dos.uoregon.edu/conduct>.

**Course Outline:** This is only a working draft of the course outline; it will be revised as the quarter progresses. Additional readings may be added. Dates on which particular topics are to be presented in lecture are subject to change, as are reading assignment due dates; however, we will not change the dates of quizzes or exams unless absolutely necessary. The official updated version of the outline will reside on the Canvas web site. Updated print versions can also be obtained from the instructors.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY
<b>JUNE 26</b> <i>Jeff</i> Intro to Brain & Behavior (pp. 1-10; 14-17)	<b>27</b> <i>Jeff</i> Cells & Structures (Worksheet)	<b>28</b> <i>Melissa</i> Neurophysiology I (pp. 52-63) Introduction Survey Due	<b>29</b> <i>Melissa</i> Neurophysiology II (Worksheet)
<b>JULY 3</b> <b>Midterm Exam #1 – Ch. 1, 2, and 3</b>	<b>4</b> <b>No Class – Independence Day</b>	<b>5</b> <i>Jeff</i> The Chemistry of Behavior I (pp. 79-89)	<b>6</b> <i>Jeff</i> The Chemistry of Behavior II & Vision I (pp. 92-102 & Worksheet)
<b>10</b> <i>Jeff</i> Vision II (pp. 183-202)	<b>11</b> <i>Melissa</i> Hormones & Sex (pp. 220-224, 237, & Worksheet)	<b>12</b> <i>Melissa</i> Emotions, Aggression & Stress (pp. 320-334)	<b>13</b> <b>Midterm Exam #2 – Ch. 4, 7, 8, and 11</b>
<b>17</b> <i>Jeff</i> Memory & Learning (pp. 383-393 & Worksheet)	<b>18</b> <i>Melissa</i> Psychopathology (pp. 352-361)	<b>19</b> Review for Final (optional)	<b>20</b> <b>Final Exam</b>