

Hormones and Behavior (PSY 450/550)
CRN: 25415/25427
University of Oregon
Winter 2017

Instructor: **Dr. Jagdeep Kaur-Bala**
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346-4953
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Classroom: **111 Lillis Hall**
Time: **10:00-11:20 am TR**

Office Hours: **11:30am- 12:30pm Tuesdays/Thursdays** (& by appointment)

Teaching support: GTFs are also available to help students.

Colton Christian, 461 Straub Hall, **Off. Hrs: Tue/Thur 9 am – 10am** & by appt. coltonc@uoregon.edu

Course Description: This course focuses on the relationships between the brain, the endocrine systems, and behavior. We will study the effects of hormones on development and differentiation of the body and the brain with a focus on Relationships among the brain, endocrine systems, and behavior. We will examine hormonal signaling and behaviors that are influenced by and themselves effect these mechanisms. In addition, we will discuss developmental effects of hormones on the brain, puberty, sexuality, aggression, stress, rhythms and moods.

Learning Objectives: One goal of this course is for you to gain foundational knowledge of major theories, research findings and methodological approaches in the field of human neuroendocrinology. We will include readings and discussions of the methods used by scientists to examine questions related to sexual, parenting, social attachment, aggression, stress and other behaviors and their interaction with hormonal mechanisms. A second important goal is for you to gain proficiency in reading, analyzing and critically evaluating scientific literature. Discussion and writings based on empirical research in the field is an important part of this course. A third goal is for you to familiarize yourself with interventions that can influence these behaviors as well as hormonal influences in the brain. In addition, we will work to enhance your self-study skills through reading response and discussions assignments. Overall, the format of this course is designed to help you to hone your scientific and critical thinking skills while studying neuroendocrinology.

Required Text: **An Introduction to Behavioral Endocrinology** by Randy J Nelson, 5th edition is required. Please notify me immediately if you have difficulty obtaining the text from the bookstore. A copy of the text is on reserve in the Knight Library. Earlier editions of the textbook are acceptable for conceptual understanding, but lack important updates of recent research on the topics covered in class. Students may choose to use an earlier edition, provided they are confident that they will be attending class regularly and can use class notes, the library copy of the new edition and/or other readings to review more recent research that will be a part of discussions in class.

Other Texts: Please note that all additional reading will be posted on Canvas; you are NOT required to buy either of these books. Students interested in different aspects of hormone-behavior interactions may find parts of the following texts interesting.

Behavioral Neurobiology: The Cellular Organization of Natural Behavior, Thomas J. Carew, Sinauer Publishing
Behavioral Endocrinology, Jill Becker, S. Breedloves and D. Crew, MIT Press.

Course website: <http://canvas.uoregon.edu> This course is managed via canvas. This course site will provide supplemental information for the course (syllabus, course schedule, grades, copies of overheads, assignments, etc.). Please be sure to check for announcements and updates often.

Course Format: The material in this course will be presented through a combination of assigned reading from the text, class lectures, in-class discussion, and demonstrations. Please note that some class materials (videos, demos, etc.) will not be available outside of class due to copyright and intellectual property laws. Lecture material and readings will have overlap, but will not be replications of each other; some lecture material will not be covered in the readings and vice versa. Each of the non-lecture parts of the course (discussions, readings, papers, presentations) are designed to reinforce ideas and augment concepts presented in lectures. Questions are

encouraged in all parts of the course and students are welcome to stop by my office for clarifications and/or discussions during my office hours or additional appointments, and equally welcome to see the GTF(s). It is my hope that by the end of this course you will have a new appreciation for how you experience the world on a daily basis. This is a fast paced class and you should plan on scheduling regular intervals of time for studying/assignments outside of class.

GRADING POLICY

Final grades are based on consistent performance through the term. As such, the final grade will include the weighted scores for the quizzes, the term papers, study group discussion responses and the exams. Graduate students (Psy550 class) will also undertake an additional self-study assignment and prepare a presentation for class that will also be graded. In addition, some opportunities for extra-credit will be available to all.

Letter grades will be determined as follows: A (90-103% of total possible points), B (80-89%), C (70-79%), D (60-69%), F (0-60%). Scores in the upper and lower third of each grade range will be awarded a 'plus' or a 'minus' respectively. Typically, grades for individual tests and assignments are not curved. However, the instructor reserves the right to relax (but not stiffen) this criterion for final grade assignments, depending on the actual distribution of scores.

- **Quizzes** – highest- scoring 4 (of 6 total) quizzes form 15% of final grade
- **Midterm Exams** – your lower scoring midterm counts for 15% of final grade and the higher scoring midterm for 20%
- **Final Exam** – 25% of final grade
- **Term Paper** – 15% of final grade
- **Class presentation** (*graduate students only*) – 10% of final grade
- **Study group discussion responses** - 8% of final grade (0% for graduate students)
- **Class participation** – 2% of final grade (0% for graduate students)
- **Extra-credit** (**optional**) - up to 3 points added to final grade

Quizzes: (15%)

Short quizzes will be given in the first 10 minutes of several scheduled classes (see course outline). Quizzes will contain 4 multiple choice questions that pertain to the most recently presented lecture materials and the readings from the text. The quizzes are designed to serve as quick reviews of recently covered materials as well as to help you keep up with the reading assignments. Of the 6 quizzes, the 2 with the lowest scores will be dropped, with the score of the remaining four yielding 15% of the final grade. 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 (Midterms – 15% for lower, 20% for higher scoring midterm; Final 25%): Exams primarily test conceptual understanding. The exams will be part multiple choice, part fill-in-the-blank/match the information and part short answer/short essay. All exams are somewhat comprehensive i.e. each exam will contain questions drawn from the entire course. However, a greater focus on material covered after the previous exam is typical (refer to the study guide for each exam for a list of general concepts and detailed topics included in that test). All midterms will be initially scored out of 20%. At the end of the term, your lowest midterm score will be weighted to 15% of the final grade.

No make-up exams will be given without evidence of a valid excuse, and prior arrangement with the instructor – if you know in advance that you cannot take all exams on the appointed dates (see the course schedule below), do not take this course! If unforeseen circumstances during the term prevent you from taking an exam, notify the instructor immediately. Allowable excused absences are medical emergencies, athletic events such as away games for student athletes and executive orders/court orders. All such occasions must be accompanied by official documentation. Student athletes should notify me of their away schedule early in the term and make arrangements for taking missed tests on the road, when possible. Format of make-up exams may be different in type of questions and/or choices.

Term Paper (15%): A prerequisite to gaining scientific knowledge of any sort is the ability to read and critically evaluate the primary scientific literature. The goal of this assignment is to help you develop these essential skills.

Students will be required to write a 7 – 9 page (double-spaced, 1 inch margins, 10-12 point font) term paper that describes compares and contrasts two journal articles that address a topic relevant to hormones and behavior. I suggest that you use the textbook and course outline as a first source for selecting a general topic, followed by library, PsycINFO, and Pubmed/Google scholar searches for the selection of the two related articles on the topic of your interest (for online assistance in your search, see <http://libweb.uoregon.edu/guides/psychology/>). The chosen articles must be **empirical** in nature, with data collected to investigate a specific question related to the topic of interest (*i.e., no reviews, commentaries, news reports or summary articles!*). The due dates for this assignment have been designed to help you get an early start on your assignment and enable you to distribute the work on the paper throughout the term.

You must turn in four different items pertaining to the paper (Specific due dates as per course outline):

- 1) A topic name, *citations of the 2 related empirical research articles* chosen and a brief description of the topic (one paragraph describing why the topic is appropriate and interesting, and how the 2 research articles that you have chosen will help you investigate the topic should be **submitted to the "Term Paper" section of Canvas**. Submissions via email will not be accepted. This will account for **10% of the term paper grade**.
- 2) The term paper topic and articles chosen will be finalized after feedback from the instructor/GTF. Electronic versions of the complete articles should be submitted on Canvas. *After the due date, you may not change your chosen topic and articles without the instructor/GTF's consent.*
- 3) **Peer review (optional)** - A draft of the paper that will be given to other students in the class to review. If you choose to do the peer review, you must bring a hardcopy draft of your paper to class on the date it is due. If you choose to do this, it will account for **20% of the term paper grade (10% for your editing ability of your peer's paper and 10% for the draft)**. *If you choose NOT to go through this process your final paper will be graded with this 20% included in the assessment.* Edited papers are due back in the following class.
- 4) **VeriCite check**– I strongly encourage you to upload your paper to VeriCite on Canvas and check for originality of writing for yourself before submitting your paper for grading. Students who are asked to upload after submission are REQUIRED to upload their papers. In these cases, failure to do so in a timely fashion will adversely affect your grade. At that time, if your writing is found lacking in originality, you may be penalized (see academic honesty section below)!
- 5) The final version of the paper is due **in class during week 9 of term (see course schedule)**. The paper as well as the peer edited draft (for those who took the option) should be submitted in hardcopy at the beginning of class. **The paper should include a title page, abstract and citations written in APA style** ([reference copies of the APA Publication Manual](#) are available in many of the University Libraries).

Each paper should include (*with equal emphasis on #2 through #6 below!*):

In writing your paper you should include:

- 1) A brief introduction to the general topic.
- 2) A summary of the articles in your own words, including the question under investigation, the hypothesis being tested, the methods used, the findings, and the conclusions drawn by the authors.
- 3) A comparison of the two articles, describing how the findings of one either support, conflict, or extend the findings of the other.
- 4) A discussion of the merits and deficits of the articles, including suggested ways that the deficits could have been avoided. *For example, questions such as these should be addressed: Is the question an interesting one, and is it framed properly? Is the hypothesis valid and defensible? Are the methods appropriate to address the question? Are the findings clear and interpreted appropriately? Are the authors' conclusions warranted, given the findings?*
- 5) An overall assessment of the significance and quality of the contribution of the articles to the field of hormones and behavior.
- 6) Future directions for the research should be discussed. Suggest a research study you would conduct if you were to take this research further. *(This should include a clear well defined hypothesis and discussion of expected findings, but need not detail methods or analysis)*

In order to improve the quality of papers, and to provide you with experience editing, papers will be **peer edited** (optional). On the day that your paper is "due for editing", you will turn your paper in hardcopy at the

beginning of class. At the end of class, you will be given someone else's paper to edit. You will have 2-5 days to edit the other student's paper, and then you will bring the paper to the next class and return it to the student. Your paper, meanwhile, will have been edited by someone else. You will then have a few more days to consider the corrections, incorporate those you think are good, revise the paper, and then turn in your "final version" of the paper AND the corrected original. Your grade on the paper will be based mainly on the final version, but your original will be considered too (10% points), in order to prevent sloppy first drafts. Your editing will also be evaluated (10% points), and you will receive points toward your final grade for it. Guidelines for editing will be available on Canvas.

Important note: *ALWAYS keep a copy of your paper and reference articles either on disk, or a hard copy!* Your peer editors are no more reliable than you, perhaps less so, and they may misplace or forget your paper. If your peer editor does not return your edited paper to you, you will not be penalized (except that your paper will not have the benefit of having been edited – you may wish to ask a friend in the class to edit your paper for you), but you will still be responsible for turning in an original and final version of the paper when it is due. Also, please keep in mind that just as the quality of students in this course varies so does the quality of editing. Taking bad advice from a peer editor is no excuse for errors in a paper. *Papers (drafts) are due at the beginning of class on the day they are due. If you don't turn your paper in before the start of class, it will not be eligible for peer editing,* and you will not be given a paper to edit (so you will lose your peer editing points). If you cannot be in class the day a paper is due for peer editing, you may turn in the paper early so that you will be eligible for the peer editing system, but it is your responsibility to arrange to pick up the paper you are to edit from me. If you cannot be in class the day peer edited papers are to be returned to their authors, you can also return the edited paper early.

Peer-edited draft (if option taken) should be attached to your final paper; both submitted in hardcopy before class on the due date. The term paper grade will be determined by 1) the timely submission of your topic and citation and the paragraph describing the term paper topic (10%), 2) the quality of the final paper (90%) [or paper(70%) and draft(10%) with the peer editing that you provide another student (10%)]; in total, the paper grade is worth 12.5% of the final grade in the course. *Please note: At no point will email submissions be accepted for this assignment. Please be sure to submit the topic, citations, and articles on Canvas and the draft and final paper for grading as hardcopies!*

Finally, *plagiarism will not be tolerated, and will be dealt with according to official University policy (see section on Academic Honesty below).*

Study group Reading responses and discussion assignments (8%- 0% for graduate students): We will form 5-6 member study groups in order to have some contact time outside the class in which course work may be discussed and small assignments completed as a group. The study groups will be expected to meet once a week and 5 discussion reports will be due during the term (see outline for due dates). For each report, I will give you assignments and will be looking for timely responses (via Canvas). Only one response is required from each group for each of the assignments. All members of the group will receive the same grade for the assignment.

Note: Sometimes, group members feel that not everyone in the group is working to their best and so it is not fair for everyone in the group to receive the same grade for an assignment. If such is the case for your group, you can choose (as a group) to award individual grades for the report. *If the group decides that it is not fair that every person receives the same grade for a particular report, I will let the group decide on grades for each member.* For example, if the group grade on a particular assignment is 85 and there are 5 members in the group, the group will have a total of 425 points (85 times 5) to spread among its members. The group can then negotiate with all members and spread out the total points to all members in any way the group sees fits, as long as all members agree to the point spread. *The only requirement is that the group negotiates who gets what grade and that all members of the group give the instructors a written agreement to the point spread. It will be the responsibility of the group to notify me of the point spread if they wish to use this alternative.*

Class Presentations: (10% - *Psy550 (graduate) students only*) Psy550 students will be required to create a 15 min presentation related to the course materials on a topic of **their** interest. Presentations should be designed to share in depth study on an area related to behavioral neuroendocrinology not directly covered in the lectures. Topics for presentations are due **beginning of the first class of week 3**. Students are expected to set up an appointment for a one-on-one meeting with the instructor *at least* once before this date and once before the date of their presentation. These meetings give us a chance to explore your interests together. I am available to help you manage your reading list, discuss findings and plan your presentation. This ensures that the effort you put into your assignment is focused and fruitful!

If two or more students have the same idea for a presentation, the one that informs me first (by email) will have exclusive rights to the idea. You are encouraged to confer with me about the choice of topics, the research involved and the preparation of the presentation. Accompanying write-up and copies of slides, overheads, etc. are **due on the day of your presentation**. *The instructor reserves the right to keep copies of the presentations for use in future courses.* Of necessity, the class presentations will be spread out through the latter part of the term; some presentations will have to take place earlier in the term than others. Dates of individual presentations will be decided by the instructor. As such, while assessing/grading the presentations, I will be sure to keep in mind the amount of time (into the term) each student got for preparation of this assignment.

Participation (2% - 0% for graduate students) is based on **attendance and discussion**. It is important that you come to class! Many of the exam questions are derived from lecture content that is not in the assigned readings. Other class materials, like videos are not available online and discussions/activities often can't be made up after the class. *Credit will be awarded for class participation and occasional in-class assignments/group work/discussions.* Attendance will be taken during some (*random!*) class periods and after specific class activities. This can be at any point during the class period. All students who participate in the activity and sign attendance at that time will be awarded participation points. Additionally, a moderated discussion on Canvas discussion boards that helps learning and concept clarification may be assigned for credit.

What about extra credit?

The only way to earn extra credit in this class is to accrue participation points in excess of the 2% listed above. You can earn **up to 3 additional points** in extra credit for **Class Participation**. These points will be **added to your final grade** at the end of the term. So, if you score an 80% with tests and assignments, and you earn 3 points of extra credit, your final score will be 83%.

Due Dates: **Assignments are due by the start of lecture on the appropriate date**, and can be turned in to me (or your GTF) during class or during office hours *the day before it is due*. An assignment turned in after its deadline will be marked down 10% for each day late.

Academic Honesty: **Cheating will NOT be tolerated in any form in this class.** All work submitted in this course must be your own. You may be required to submit writing assignments to **Vericite**. Vericite is a software tool designed to help students avoid plagiarism and improper citation. For more information on VeriCite refer to guidelines on Canvas. By enrolling in this course you grant the instructor permission to submit your work to VeriCite or some other plagiarism analysis and detection program. For the consequences of academic dishonesty, refer to the Schedule of Classes published quarterly. If your responses on assignments are suspected of plagiarism or if a proctor has any reason to be uncomfortable about your conduct during a test, they may ask you to move seats, confiscate your test and/or mark an "F" for that test/assignment. All 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 instructors before you complete any relevant requirements of the course. (For more information, see the UO web site regarding academic honesty at:

<http://uodos.uoregon.edu/StudentConductandCommunityStandards/AcademicMisconduct/tabid/248/Default.aspx>

Accessibility, Diversity and Inclusivity

It is the policy of the University of Oregon to support and value diversity. It's also personally important to me that my classes are accessible to all and respectful of diversity, including diversity in race, ethnicity, gender, sexuality, disability, socioeconomic status, religion, culture and ideology. My goal is to create a respectful classroom environment where students feel safe to explore difficult topics. Many topics related to hormones behavior interactions that we will be discussing in class are issues that may evoke strong emotions and/or have personal significance to you or your classmate's life. As such, I ask that all class discussion be open, understanding and respectful. Your suggestions, concerns, and other feedback are always welcome, and I will listen to you with respect and an open mind.

If you need support or counseling, please be sure to seek out a supportive friend, counselor, and/or a social service (see list below).

Counseling resources:

<i>Local Crisis Lines & Counseling</i>	
University of Oregon Crisis Line	346-4488
University of Oregon Counseling Center	346-3227
Center for Community Counseling	344-0620

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. *The University of Oregon is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in disability related barriers to your participation. You are also encouraged to contact the Accessible Education Center (formerly Disability Services) in 164 Oregon Hall at 346-1155 or uoaec@uoregon.edu .* Also, please request that an AEC adviser to send a letter verifying your disability and accommodation needs. For a list of resources provided by the Accessible Education Center, please see <http://aec.uoregon.edu/about/index.html>

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 special arrangements. Please note that you may NOT use electronic dictionaries/translators during exams/quizzes. However, if necessary, please discuss the need for a paper dictionary/translator at the beginning of the term with the instructor and appropriate arrangements will be made.

Students with financial hardship: If you are a student experiencing financial hardship and do not have access to notebooks, pencils, and other imperative resources to succeed in this course, please talk to me within the first 2 weeks of the term for assistance. We can work together to ensure you find the resources & time you need.

Course Outline: This is only a working draft of the course outline; it will be revised as the term progresses. **Dates on which particular topics are to be presented in lecture are subject to change, as are reading assignment due dates; however, I will not change the dates of quizzes, exams or term paper deadlines 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 instructor during normal office hours. **Version Updated:01/08/2017 3:40 PM**

Date	Topic	Readings (focus pages)	Assignments/Due dates/Quizzes
10-Jan	Syllabus and Overview		
12-Jan	Introduction to Behavioral Endocrinology	Ch. 1(6-16)	
17-Jan	Techniques in Behavioral Neuroendocrinology	Ch. 1(16-32)	SGR 1 due[#]
19-Jan	Endocrine systems: How hormones work	Ch. 2(36-38,74-84) Class Notes**	
24-Jan	Major endocrine glands and hormones	Class Notes**	Quiz 1, Presentation topic due
26-Jan	Sex determination and differentiation	Ch. 3 (93-109) Additional reading**	Term Paper topic due
31-Jan	Differences in sexual development	Ch. 3(118-137)	Quiz 2, SGR 2 due[#]
2-Feb	Sex Differences in Behavior	Ch. 4 (170-199)	Term paper topics finalized
7-Feb	First Midterm Exam		
9-Feb	Male reproductive behavior	Ch. 5 (206-211, 238-261) Class Notes**	
14-Feb	Female reproductive behavior	Ch. 6 (287-299, 304-312, 328-330)	
16-Feb	Parental behaviors (humans)	Ch. 7 (337-340) Class Notes**	Quiz 3
21-Feb	Attachment & Social behaviors	Ch. 8(393-402) Class Notes**	SGR 3 due[#]
23-Feb	Aggression & Dominance	Ch. 8(410-414,435- 451)	Quiz 4,
28-Feb	Second Midterm Exam		
2-Mar	Stress	Class Notes** (Ch.11 for ref.)	Term paper draft due for peer editing (<i>optional</i>)
7-Mar	Homeostasis and behavior Psy550 Class Presentation	Class Notes** (Ch.9 for ref.)	Peer edits due back
9-Mar	Hormones Behavior interactions I Psy550 Class Presentation	Class Notes** Canvas readings	Quiz 5, SGR 4 due[#]
14-Mar	Hormone behavior interactions II Psy550 Class Presentation	Class Notes** Canvas reading	Final term paper due
16-Mar	Affective Disorders	Class Notes** (Ch. 13 for reference)	Quiz 6,
TBA	Review session for Final		SGR 5 due[#]
23-Mar	FINAL EXAM	Thursday, 8:00am – 10:00am	

****Additional class notes with emphasis on class discussion; chapter for reference**

Due dates for SGRs depend on pace of class discussion and may change; check Canvas for updates.