PSYC467

Hormones and Behavior
Spring 2013

PROFESSOR: Dr. Jaclyn M. Schwarz, Assistant Professor of Psychology
Office: McKinly Laboratory, Room 111
Contact: jschwarz@psych.udel.edu
Office Hours: Monday and Wednesday 9-10 am (or by appointment)

Class Meetings: Monday, Wednesday, Friday from 10:10 am – 11 am in Purnell Hall Room 327

Summary: In this course, we will examine how hormones produce changes in behavior. By the end of this course, I am hopeful that you will

- understand the biology of hormone actions in the body and the brain,
- be able to interpret these foundations and apply them to your life,
- confront misconceptions and evaluate popular ideas of hormones and behavior in the media,
- and incorporate personal opinions and evaluate your own personal experiences on this topic.

We will focus on the influence of hormones on sexual differentiation of the brain, sex / mating behavior, parental behavior, aggression, stress and depression, learning and memory, and homeostasis with an special emphasis on how the interaction between hormones and behavior can change from birth, to puberty, to old age.

Course Organization

- **Short lectures** provide the foundational knowledge of the biology of hormones
- **Team-based Learning** will provide more in-depth discussion of specific topics and research findings
- **Individual short written assignments** to assess your understanding and personal interpretation of topics (these will be worked on in and outside of class)

*We will use science and research to guide us in our understanding of hormones and behavior, but I do not expect you to have a science background to understand the topics that will be covered in class.*


Additional Suggested Reading: “The Science of Scientific Writing”, by George D. Gopen, PhD; in the American Scientist

Course Assignments

1. **Team-Based Learning Sessions** (90 points total)

As part of the course, you will be a member of a permanent team.

There are 8 team-based learning sessions throughout the semester.

A work of primary literature or experimental data will be available for download on Sakai. You **must** read this prior to the start of the Team-Based learning session. This is not optional. If you do not read the assigned material, you may not
get the points for the day. The Team-Based learning session will be focused on analyzing, synthesizing, and applying the concepts covered in lecture the days before with the research paper provided to you. During the Team-Based learning sessions, you will work in your teams to answer three application questions based on the research paper/data. Each application question is worth 4 points. Thus each day of Team-Based Learning, there is the potential to earn 12 team points (3 application questions X 4 points each = 12 team points total).

These application questions will be completed on paper, in class. At least one member of your team will need a ball point pen to complete these application questions.

Preparation for Class and Participation. Your group will be called on in class to answer application questions, recall information, and/or evaluate or synthesize information. You are expected to participate in the activities of your group and to contribute in a meaningful way that will lead to the best possible answer by your team. Teams are expected to participate in the activities assigned and to volunteer responses during Team-Based learning sessions.

Classroom Attendance. Students play a vital role in the success and excitement of this course, because the value of the course is in the activities and discussions that will occur during class. Classroom attendance is mandatory to receive points for the assessments occurring during that day. Arriving to class late for Team-Based learning sessions and leaving a class meeting before all activities are completed (the end of the class) on Team-Based learning sessions will be considered an absence and may result in a loss of all points accumulated for that session. Excused absences will be determined on a case-by-case basis.

Peer Evaluation. Peer evaluation will occur at the end of each Team-Based learning session. The peer evaluation will be performed by other members of your team and by you (e.g. you will rate yourself). They (and you) will rate your contribution to the group work on a scale of 0-3 (3 being the highest contribution). Your peer evaluation score will be an average of your evaluation scores (from 0-3). You must complete each peer evaluation, including an evaluation of yourself, to receive full credit for each Team-Based learning session.

Dropping the lowest two scores. Your final point totals for your Team-Based Learning session will be calculated as the total points accumulated from your top 6 of the 8 Team-Based Learning Sessions. Your final point totals from Peer Evaluation will be accumulated from your top 6 of the 8 Team-Based Learning Sessions. Thus, you can drop 2 of the lowest scores from the group points and the peer evaluation points from the Team-Based Learning days.

(2) Short Writing Assignments (125 points total)

The writing assignments are short assignments (only 500-1000 words) meant to assess your understanding of the topic, develop your own perspective on the topic, and enhance your writing skills. In the beginning of the semester, we will spend one class discussing a few general guidelines for good writing. These guidelines can be found in the additional suggested reading, “The Science of Scientific Writing”. These writing skills are very useful, even outside of science writing! I hope these guidelines and your experience in this class will enhance your own writing skills, so that you may further develop this important style of communication.

The first draft. Prior to class, you will prepare a first draft of the writing assignment listed below. When the first draft is due, please bring two printed copies of your paper with you to class. One copy will be used by your teammates to edit your writing in-class and one will be turned in to me. In class, the first draft of each writing assignment will be edited by your team members in-class on the due dates listed below. Your teammates will assess your comprehension of the topic, your expression of the topic, and your grammar. Often editing another person’s writing is the best way to learn and incorporate good writing skills into your own work! After this class, you will have 5 days to incorporate the edits and suggestions provided by your teammates.
**The final draft.** The final draft is due to me in class on the dates listed above. The final draft of each writing assignment will be graded by me. Each writing assignment will be worth a potential of 25 points. I will assess both the final product and how your writing improved from the first draft.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Draft 1 due for In-Class Discussion (Bring two copies to class!!)</th>
<th>Final Draft due in class</th>
<th>Potential Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homosexuality</td>
<td>Wednesday February 20th</td>
<td>Monday February 25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>25 points</td>
</tr>
<tr>
<td>Contraceptives</td>
<td>Monday March 4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Friday March 8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>25 points</td>
</tr>
<tr>
<td>Hormones and Autism</td>
<td>Monday March 18&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Friday March 22&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>25 points</td>
</tr>
<tr>
<td>Menopause / Andropause</td>
<td>Wednesday April 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Monday April 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>25 points</td>
</tr>
<tr>
<td>Stress and Depression</td>
<td>Wednesday May 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Monday May 6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>25 points</td>
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Short Writing Assignment Topics *(only 500-1000 words)*

1. Homosexuality – Describe to the media the potential biological basis of homosexuality.
2. Contraceptives – Female and male – given what you know about sex behavior should there be a male hormonal contraceptive? Do you think there may be effects of female contraceptives on behavior that have not been explored or discussed?
3. Hormones and Autism - Is there a neuroendocrine cause or correlate of autism? Are there any unexplored avenues with regard to hormones and autism?
4. Menopause and “Andropause” – Should we be taking Hormone Replacement Therapy (HRT)? Do the benefits outweigh the risks? What would you recommend?
5. Stress and Depression: Should the stress axis or the circadian circuit be a pharmacological target for depression?

________________________

**Mid-term Exam (125 points) and Final Exam (125 points)**

Two exams will be given (a mid-term and a final exam – see specific dates below). These exams will consist of short answer and multiple choice questions. The exams will include questions about specific topics covered in the reading, the lecture, and the team based learning sessions. I may ask you to integrate or compare some of the topics you have learned in the different classes. The Mid-term exam will cover class material from February 4<sup>th</sup> – March 18<sup>th</sup>, and the Final exam will cover class material from April 1<sup>st</sup> – May 13<sup>th</sup>. **Thus, the Final exam is not cumulative.** Each exam is worth 125 points.

No make-up exams will be given for an unexcused absence. Only the professor can grant an excused absence for an exam, which will be determined on a case-by-case basis. You must contact the professor at least 2 weeks prior to the exam for athletic or religious conflicts. If you are too ill to take an examination, you must contact the professor PRIOR to that exam. If you are hospitalized or require emergency treatment, you may have a member of the family contact the professor on your behalf. You may be asked to provide documentation of the emergency. In these cases, a make-up exam will be administered at the discretion of the professor.
You can drop the two lowest Team-Based Learning Sessions, including Team Points and Peer Evaluation.

<table>
<thead>
<tr>
<th>Writing Points</th>
<th>Team Points**</th>
<th>Peer Evaluation**</th>
<th>Exam Points</th>
<th>TOTAL</th>
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<tr>
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<tr>
<td>FINAL EXAM</td>
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<td></td>
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<td>125</td>
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<td></td>
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Final Grade

There will be no rounding or “curving”.

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<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Total Points Needed</th>
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<tr>
<td>A</td>
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<td>432 – 465</td>
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<tr>
<td>A-</td>
<td>90 to &lt; 93%</td>
<td>418 – 431</td>
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<tr>
<td>B+</td>
<td>87 to &lt; 90%</td>
<td>404 – 417</td>
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<tr>
<td>B</td>
<td>83 to &lt; 87%</td>
<td>385 – 403</td>
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<tr>
<td>B-</td>
<td>80 to &lt; 83%</td>
<td>372 – 384</td>
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<tr>
<td>C+</td>
<td>77 to &lt; 80%</td>
<td>358 – 371</td>
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<tr>
<td>C</td>
<td>73 to &lt; 77%</td>
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<tr>
<td>C-</td>
<td>70 to &lt; 73%</td>
<td>325 – 338</td>
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<tr>
<td>D+</td>
<td>67 to &lt; 70%</td>
<td>311 – 324</td>
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<td>D</td>
<td>63 to &lt; 67%</td>
<td>292 – 310</td>
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<tr>
<td>D-</td>
<td>60 to &lt; 63%</td>
<td>279 – 291</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60%</td>
<td>0 – 278</td>
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SCHEDULE (Tentative)

February 4th – Introductions and the Syllabus
February 6th – Glands and Hormones /Techniques to study hormones + behavior
February 8th – “Writing from the Reader’s Perspective”: Writing for Science + Life / MEET YOUR TEAMS

February 11th – Sexual differentiation and Sex determination
February 13th – Puberty and Adolescence
February 15th – TEAM BASED LEARNING Session 1: Sexual differentiation

February 18th – Neuroendocrine basis of sexual orientation and gender-related behaviors
February 20th – Writing Assignment 1: Homosexuality... (Bring two copies to class)
February 22nd – Sex differences in Neuropsychiatric Disorders

February 25th (Paper 1 due) - Roles of experience and hormones in male sexual behavior
February 27th - Hormonal control of female sexual behavior
March 1st – TEAM BASED LEARNING Session 2: Sex behavior

March 4th – Writing Assignment 2: A male contraceptive... (Bring two copies to class)
March 6th – Pregnancy and Maternal Behavior
March 8th (Paper 2 due) – Maternal Behavior continued and Parental Behavior

March 11th - TEAM BASED LEARNING Session 3: Maternal/Paternal Behavior
March 13th – Social Behavior: Oxytocin and trust/Social attachment
March 15th – TEAM BASED LEARNING Session 4: Social behavior

March 18th - Writing Assignment 3: A hormonal basis for autism? ... (Bring two copies to class)
March 20th - ***Review Q&A***
March 22nd (Paper 3 due) – MID Term exam

SPRING BREAK – March 25th – 29th

April 1st – Learning and Memory
April 3rd – Hormonal control of cognition and brain plasticity
April 5th – TEAM BASED LEARNING Session 5: Hormones and Cognition

April 8th – Aging: menopause and “andropause”
April 10th – Writing Assignment 4: Hormone replacement therapy... (Bring two copies to class)
April 12th – The stress axis

April 15th (Paper 4 due) – Stress and Cognition
April 17th - TEAM BASED LEARNING Session 6: Stress
April 19th - Stress in health and disease

April 22nd - Biological Rhythms – Sleep
April 24th - Biological Rhythms – Depression + Disease
April 26th – NO CLASS work on TBL assignment 7 and Writing Assignment 5

April 29th - TEAM BASED LEARNING Session 7: Biological Rhythms
May 1st - Writing Assignment 5: Depression Therapy... (Bring two copies to class)
May 3rd - Feeding Behavior I

May 6th (Paper 5 due) - Feeding Behavior II
May 8th - TEAM BASED LEARNING Session 8: Feeding behavior
May 10th – FLEX DAY any topic that didn’t get finished will be covered in class this day

May 13th - ***Review Q&A***
Academic Honesty

Statement of Policy

“All students must be honest and forthright in their academic studies. To falsify the results of one’s research, to steal the words or ideas of another, to cheat on an assignment, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance.”

You can find more information at: http://www.udel.edu/stuguide/12-13/code.html#honesty

Examples of practices that are acceptable:
• Getting advice from faculty and graduate students in the University of Psychology department.
• Discussing ideas and problems with fellow students/teammates.
• Editing a fellow students writing.
• Getting help from me (your professor).
• Modeling your answers and writing after examples that I give you.
• Of course, doing all of your work by yourself, without any help, is always acceptable.

Examples of practices that are NOT acceptable:
• Copying another student’s work or duplicating another student’s answer.
• Submitting another student’s work, in whole or in part, as your own on an assignment or examination.
• Copying someone else’s computer file, modifying it, and handing it in as your own work.
• Copying an idea or a phrase from someone else’s work, and not citing it.
• Allowing another person to copy all or part of your work, to hand in as his/her own.

Center for Counseling and Student Development

At times, personal problems, stress, or life circumstances can interfere with your academic functioning. UD’s Center for Counseling and Student Development provides a variety of services to support you in your academic work and be successful. The Center works with you on a confidential and individual basis; in addition, you may utilize assessment and counseling services, and referral to additional resources off campus. CCSD is funded by the student health fee and does not charge for services. For more information, visit www.udel.edu/counseling or call the office at 831-2141.

Disability Support Services (DSS)

Please note: The University of Delaware is committed to diversity and welcomes students with disabilities. If you have a disability related need for a modification or reasonable accommodation in this course, please contact the Office of Disability Support Services located at 325 Academ St, Suite 161, Perkins Student Center, email: dssoffice@udel.edu or call 302-831-4643.

Office of Academic Enrichment

At times, you may experience some academic challenges, and you may find it helpful to utilize some of the services provided by the Office of Academic Enrichment. OEA professional staff are committed to helping you address your academic challenges in a variety of ways. Visit their webpage (http://ae.udel.edu) or call 302-831-4555 to learn about tutoring options (low-cost individual, free group and drop-in), free online and in-person workshops on study skills and time management, and free one-on-one assistance to ensure that you are using the best possible strategies for success in your course work.
Library Resources

The University of Delaware Library provides access to a wide variety of electronic resources, including more than 360 electronic databases which provide the full text of thousands of articles. Most of these electronic resources are available to students via the University's computing network in residence halls, classrooms, offices, and at home. When using links to databases or electronic journals from off-campus, you may be prompted for your UDelNetID and password. You may stop by The Reference Desk on the first floor of the Library to talk with a librarian about database searching and locating library resources.

The Writing Center

The Writing Center offers students assistance in the writing process – from creating a paper outline to the editing process. The University of Writing Center is staffed by undergraduate students majoring in English and graduate students in the English department’s MA or PhD programs. Writing consultations are provided on a one-on-one setting.

Developed by the Center for Teaching and Assessment of Learning, 212 Gore Hall, University of Delaware