

PSYC 3020 – Biopsychology
Spring 2012
J.S. Coon 250
MWF 9:05 – 9:55 AM

Instructor: Matthew Hilimire, Ph.D. ABD

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Office Hours: By appointment

Email: gth828b@mail.gatech.edu

Class Webpage: <http://t-square.gatech.edu>

Teaching Assistant: James Broadway, Ph.D. ABD

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COURSE DESCRIPTION:

Our goal in this course is to explore psychology as a biological science. To do this, we must seek to understand behavior as a product of the brain's physiology. As we progress through the course you will see that scientists know a great deal about simple processes such as reflexes, sensory responses, and motor systems, but we know much less about higher cognitive processes such as learning, memory, emotion, and language. Ultimately, however, even these processes must be understood in terms of their underlying physiological mechanisms. We will be discussing all these topics and more. Some emphasis will be placed on how the brain is organized from an anatomical perspective and the connections between different brain structures. Take-home exercises in neuroanatomy will complement this emphasis.

PREREQUISITES:

Psychology 1101 and Biology 1520 are prerequisites for Psychology 3020.

REQUIRED TEXTS & MATERIALS

Carlson, N. R. (2006). *Physiology of Behavior, 10th ed*, Needham Heights, MA: Allyn and Bacon.

Pinel, J. P. J. & Edwards, M. (1998). *A Colorful Introduction to the Anatomy of the Human Brain: A Brain and Psychology Coloring Book*. Needham Heights, MA: Allyn and Bacon.

The 9th edition of Carlson is also acceptable, but some of the reading assignments may not match the assigned pages. An electronic version of the Carlson text is available – at a significantly discounted cost – at www.coursesmart.com.

COURSE WEBSITE

The course website will be available through T-Square (<http://t-square.gatech.edu>). Course materials and grades will be made available on this site.

ASSESSMENT:

Criterion	Total # of points
Mid-term Exams	300
Final Exam	150
<i>Course Total</i>	<i>450</i>
Extra Credit	20

Exams There will be four exams – three **non-cumulative** mid-term exams and a **cumulative** final exam held during finals week. Each of the mid-term exams will be worth 100 points and the final exam will be worth 150 points. ***Tested material will come from lecture, textbook readings, and the anatomy coloring book.*** Exams will be closed book with no notes or other media allowed. Students will be expected to answer questions based on their own knowledge of the course material **without consulting other sources**, including the instructor or teaching assistant, during exams. There is to be at least one empty seat between any two students taking exams. Students are not permitted to leave the testing room and return to continue testing (take a bathroom break before you start). Persons **arriving late** will not receive an exam if at least one person has already submitted their work. Other test administration policies are to be determined as necessary by the person supervising the test. Bring a Buzzcard or driver's license to the exam as you may be asked to provide photo identification. You may review your graded exams with the teaching assistant during office hours or by appointment. You must review your exam within 5 business days from the date of grade posting. Requests made after this time-window will not be considered.

Missed Exams: Students who email the instructor **at least 7 days before** a documented, foreseeable, and excusable absence, or **no more than 48 hours after** a documented, unforeseeable, and excusable absence will have one opportunity to take a make-up exam. Any make-up exam must be taken within 7 days of the original exam. Make-up exams are *not* guaranteed to be equivalent in difficulty or topic coverage to the original exam.

Extra Credit You may earn up to 20 points in extra credit. These points may be earned by participating in psychological research or by writing research article summaries. **If you wish to write article summaries, you must notify me by e-mail no later than January 23, 2012 and indicate that you are choosing this option.** You may complete up to 5 experiment hours or 5 research reports. *Each experiment hour or research report will be worth 4.0 extra credit points.* **You can only earn 20 extra credit points.** I highly encourage you to take advantage of this opportunity to raise your grade. All extra credit must be completed by the last day of classes (April 27, 2012). More information on these extra credit opportunities will be available on T-Square.

COURSE GRADE

Minimum # points	Minimum % of total points	Final grade
405	90	A
360	80	B
315	70	C
270	60	D

Your final grade will be based on the total number of points you earn. The required number of points for each letter grade is listed above. *There will be no curve and no rounding up of scores* (e.g., 404.9=B; 359.9=C; 314.9=D; 269.9=F). Students taking the course Pass/Fail must get a ‘C’ or better in order to pass. Grades in this course will be based entirely on your performance on the exams. **I will not work out any “deals” regarding your grade. If you are concerned about keeping a scholarship, good academic standing, etc., then please see me early in the semester and I will be happy to advise you in the best way to prepare for this course.** Please check *all* of your reported grades on T-Square and make sure they have been listed correctly. If you have *any* concerns about the correctness of grading of your assignments, contact the instructor as soon as possible. **Exams and assignments will only be reconsidered within 5 business day from the date grades were initially reported.**

ATTENDANCE

Please attend class; we will occasionally be covering material that is not in the text, or demonstrating concepts differently than in the text and your participation is essential. “Although it is recognized that occasionally it may be necessary for students to be absent from scheduled classes or laboratories for personal reasons, **students are responsible for all material covered in their absences, and they are responsible for the academic consequences of their absences.**” (from <http://www.deanofstudents.gatech.edu/>) Excusable absences include emergency medical treatment, family emergencies (such as death in the family), approved institute activities (such as student athlete travel) and job interviews.

Manufacturing a false excuse is a violation of the Honor Code. In the event of any such excusable absence, please provide documentation to the instructor upon returning to class. If no documentation is provided the absence will be considered unexcused.

OFFICE HOURS/CONTACTING THE INSTRUCTOR

For office hours, you may email me or the TA to set up a mutually agreeable meeting time. In addition, I am happy to answer *simple* and *straightforward* questions by email, but please see me in person for more involved questions. Please make an appointment to see me *early in the semester* if you are having any trouble with the course.

ACADEMIC INTEGRITY

The full honor code can be found at:

<http://www.deanofstudents.gatech.edu/Honor/>

Academic misconduct is any act that does or could **improperly distort student grades** or other student academic records. Such acts **include but need not be limited** to the following:

- Possessing, using or exchanging improperly acquired written or verbal information in the preparation of any essay, laboratory report, examination, or other assignment included in an academic course;
- Substitution for, or unauthorized collaboration with, a student in the commission of academic requirements;
- Submission of material that is wholly or substantially identical to that created or published by another person or persons, without adequate credit notations indicating authorship (plagiarism);
- False claims of performance or work that has been submitted by the claimant;
- Alteration or insertion of any academic grade or rating so as to obtain unearned academic credit;
- Deliberate falsification of a written or verbal statement of fact to a member of the faculty so as to obtain unearned academic credit;
- Forgery, alteration or misuse of any institute document relating to the academic status of the student.

While these acts constitute assured instances of academic misconduct, **other acts of academic misconduct may be defined by the professor.** All students are assumed to have read the Honor Code and consented to be bound by it.

Violations of the Honor Code are taken extremely seriously and will result in a failing grade for the course and referral to the Dean of Students for further action. If you have any questions about academic integrity, please ask. I will assume that all students enrolled in the course know and understand what constitutes academic misconduct and agree to be bound by these rules.

COURTESY

Please turn off all cellphones, beepers, and similar devices before coming to class. They can be very disruptive to others, including me. On a similar note, please restrict your use of laptop computers during class time to legitimate, class-related activities such as taking notes. Instant messaging and browsing Facebook do not constitute legitimate class-related activities. Class will begin at the listed time (9:05 AM). Please be on time. If you absolutely must be late or must leave early then please sit near the door.

Tentative Schedule of Events

Part I: Basic Principles of Biological Psychology

Week 1 (January 9-13): Issues and Themes in Biological Psychology

Reading: Carlson chapter 1
Homework: Pinel chapter 1

Week 2 (January 16-20): Anatomy of the Nervous System

No Class January 16 – Official School Holiday

Reading: Carlson chapter 3
Homework: Pinel chapter 3

Week 3 (January 23-27): Neurons and Neural Communication

Reading: Carlson chapter 2, pp 28-52
Homework: Pinel chapter 2

Week 4 (January 30 – February 3): Synaptic Transmission

Reading: Carlson chapter 2, pp 53-67; chapter 4, pp 102-113.
Homework: Pinel chapter 5

Week 5 (February 6-10): Neurotransmitters and Neuromodulators

Reading: Carlson chapter 4, pp 114-133.
Homework: Pinel chapter 6

Mid-Term Exam 1: Friday, February 10th.

Part II: Neural Systems

Week 6 (February 13-17): Neural Coding and Introduction to the Visual System

Reading: Carlson chapter 6
Homework: Pinel chapter 8

Week 7 (February 20-24): Cortical Vision; Audition

Reading: Carlson chapter 7, pp 212-233.
Homework: Pinel chapter 7

Week 8 (February 27 – March 2): Other Sensory Systems

Reading: Carlson chapter 7, pp 234-261.
Homework: Pinel chapter 9

Week 9 (March 5-9): The Motor System

Reading: Carlson chapter 8
Homework: None Assigned

Mid-Term Exam 2: In-class exam Monday, March 12th.

Part III: Development and Plasticity of the Nervous System

Week 10 (March 12-16): Development of the Nervous System

Reading: Review Carlson chapter 5, pp 77-82; TBA

Homework: Pinel chapter 4

Week 11 (March 19-23): Spring Break - No Class

Week 12 (March 26-30): Mechanisms of Learning and Memory

Reading: Carlson chapter 13, pp 439-464

Homework: Pinel chapter 10

Week 13 (April 2-6): Memory Mechanisms and Memory Disorders

Reading: Carlson chapter 13, pp 465-484

Homework: Pinel chapters 11 & 12

Mid-Term Exam 3: Monday, April 9th.

Part IV: Neuroendocrinology, Emotion, Stress, and Special Topics

Week 14 (April 9-13): The Neuroendocrine System and Sexual Dimorphism

Reading: Carlson chapter 10

Homework: None

Week 15 (April 16-20): Emotion and Stress

Reading: Carlson chapter 11 and chapter 17 pp 601-610.

Homework: None

Week 16 (April 23-27): Special topics, final thoughts, and course wrap-up

Reading: TBA

Homework: None

Final Exam scheduled for Period 13: Monday, May 4th, 8:00 AM to 10:50 AM