Psychology 372 Physiological Psychology Spring 2006
TR 10:30-11:45 am Krug Hall 7

Instructor: Susan E. Bachus
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Office Hours: TR 1 pm – 2 pm & by appointment

Course Objectives:

In addition to covering the "accepted" content in this field in the textbook, I hope to generate enthusiasm for physiological psychology as a dynamic and rapidly evolving science, arousing curiosity about the current puzzles and dilemmas in the field, and instilling awareness of the interrelationships between diverse approaches within physiological psychology. Above and beyond grasp of the content covered, aims include:

1. exposure to controversial areas of currently ongoing research, and critical evaluation of contemporary attempts to answer new questions, or reconsider old "answers", from defining a research question, to posing hypotheses to generating and carrying out research strategies, to analyzing data, to drawing inferences, to reporting results.
2. awareness of the relationship and convergence of various physiological psychological disciplines in their respective approaches to the study of a particular problem, and consciousness that a meaningful conceptualization of a problem demands the coordination of contributions from various approaches.
3. ability to critically interpret reports of scientific discoveries in the media.
4. raised consciousness as an educated consumer (e.g. for medical/pharmaceutical services).
5. understanding of the value of animal research.
6. awareness of biological aspects of psychopathology and their role in treatment.
7. consideration of possible career opportunities in physiological psychology/neuroscience.

We will not shy away from discussing the many ethical/moral/social/legal/ political issues related to the material we will cover. I want to emphasize here, however, that I will not advocate any particular position. What I **will** advocate is **informed decisions**, based on critical evaluation of the scientific literature.

Organization:

After I outline the content from the textbook, the remaining time will be devoted to class discussion of the extra assigned article, which will extend or challenge the textbook material. If you want to reinforce me for leaving some time for class participation, please jump in and contribute!

Required reading:

1. Biopsychology (6th ed.), J. Pinel, Allyn & Bacon, Boston, 2006.
2. brief current articles that I will distribute to you each meeting for the following meeting. First read the textbook chapter(s). Then, in the articles, concentrate on what the question at stake is, evaluating the logic, evidence, interpretation, and conclusion(s), and thinking about what the implications are for physiological psychology, or what further experiments or evidence are necessary before conclusions can be drawn. Come to class prepared with questions about what you have difficulty understanding. It is critical that you read this material before you come to class (or forever hold your peace)! (If you miss a class you can get a copy of the material from that class from the top file cabinet drawer outside Krasnow 128.)

Recommended reading (available on reserve in library):

Biological Psychology (8th ed.), J. W. Kalat, Brooks/Cole, Pacific Grove, 2004.
Introduction to Psychopharmacology, Lader, M., Upjohn, Kalamazoo, 1983.
Videotape: Brain Mapping: New Tools for the Clinical Neuroscientists in the 1990's
NIMH/NAMI Virtual Tour 1999

Available on "resource shelf" outside KI 128 (should not leave KI):

Cooper, J.R. et al. (1996). The Biochemical Basis of Neuropharmacology, 7th Ed., NY: Oxford Univ. Press.
Kanigel, R. (1986). Apprentice to Genius, NY: Macmillan.
Lader, M. (1980). Introduction to Psychopharmacology, Kalamazoo, MI: Upjohn Co.
Netter, F.H. (1986). The CIBA Collection of Medical Illustrations Vol. 1 Nervous System Pt. I Anatomy and Physiology, West Caldwell, NJ: CIBA GEIGY Corporation.
OPRR, NIH (1986). Public Health Service Policy on Humane Care and Use of Laboratory Animals.
Pert, C.B. (1997). Molecules of Emotion: Why You Feel the Way You Feel, NY: Scribner.
1979 Scientific American special issue on The Brain
Slides: Histotechnology Teaching Slide Set (ASCP Press, 1993).

Grading:

60%: 20% each from 3 hourly exams, plus 1 cumulative final--you only need 3 (any 3). So if you do poorly on an exam, you can take the final and substitute it. If you're happy with your 3 hourly grades, you can skip the final. All exams will include a choice between 50 objective (2 pts. @) and 10 short essay (10 pts. @) questions (you choose which ones you want to answer, but only up to a total of 100 points, which can come from all objective, all essay, or any combination). You can "qualify" your objective answers if you wish. You can ask me questions to clarify any confusion or ambiguity in the exam while you are taking it . No "study aids" are allowed during these exams. On the following class day a "feedback summary" will be distributed indicating correct answers, grade distribution, how many students missed each question, reasons for answers that were missed frequently, etc. All assigned reading and classroom presentation and discussion are fair game for exam material, though I will lean toward including material that was covered redundantly (e.g. in book, article & lecture). I will field any last minute questions you come to the exam with (e.g. you didn't realize you didn't grasp the material till you were cramming for the exam) before distributing the exam.

20%: a very brief quiz near the beginning of each class to reinforce you for having come to class prepared. These will be very simple questions that anyone who has read the material, even if s/he came away with questions in mind, should be able to answer. Periodically, there will be an additional quiz at the end of a class to discourage you from taking the quiz and leaving. You may make-up **up to 3** missed quizzes with extra work (e.g. 1 p reaction to an extra [not assigned] article—make me an offer).

20%: One 5-10 page term paper is required. This should integrate information from at least 2 disciplines or strategies in an attempt to answer a current question in the field of physiological psychology. There are 4 requirements:

1. This topic should be of **interest** to you.
2. There needs to be both **psychology** and **biology** included.
3. At least 3 primary references should be utilized. The source of any information worth mentioning in the paper is worth documenting. Reference format style is flexible as long as you are consistent and all the information is provided so that I could obtain the article myself to see whether I agree with your interpretation (which I **have** been known to do!).
4. Some creative **integration** (i.e. not piecemeal summaries, but some thought on your part to "glue" the details together).

Papers are "due" by May 4, but may be handed in as early as you wish. You have the opportunity to respond to criticisms and rewrite/resubmit a paper for a higher grade (just like we do when we try to publish!) if the first draft is submitted to me by April 28 (then the final draft is due by May 4). **You should submit a topic and 3 references to me, by email or hardcopy, by Feb. 23. That way I can tell that you're on a constructive path before it's too late to change your course if I foresee a potential problem.**

In order to allow you to recoup disasters (missed or poor performance on an exam), yet avoid substitution of quantity for quality, you can substitute an additional paper for any 20% score except for the quiz score after discussing it with me. Only the top 5 scores will be averaged to determine the final grade. Thus, you have as many "chances" as you have the energy to take advantage of, yet the final grade will be based on quality.

Abbreviations used on outlines:
R: available on reserve in library
* : you have a copy of this paper in your folder (not required reading)

Academic Dishonesty:

Maintenance of academic integrity is a shared responsibility of the individual students, faculty members, and the academic administration of the University. Infractions will be taken seriously and dealt with in accordance with procedures designed to be fair to all students.

Special Needs Accommodations:

If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 703-993-2474. All academic accommodations must be arranged through that office.

Schedule	**topic**	**assigned reading in Pinel**
Jan. 24	introduction/overview	
Jan. 26	Introduction to Physiological Psychology	Ch. 1
Jan. 31	Evolution, Genetics & Experience	Ch. 2.1-2.2
Feb. 2	Evolution, Genetics & Experience	Ch. 2.3-2.4
Feb. 7	Anatomy of the Nervous System	Ch. 3.1-3.4
Feb. 9	Anatomy of the Nervous System	Ch. 3.5-3.6
Feb. 14	Neural Conduction and Synaptic Transmission	Ch. 4.1-4.4
Feb. 16	Neural Conduction and Synaptic Transmission	Ch. 4.5-4.7
Feb. 21	Research Methods	Ch. 5.1-5.5
Feb. 23	Research Methods **paper topic & ref's due**	Ch. 5.6-5.8
Feb. 28	Exam 1	
Mar. 2	Sensation: Vision	Ch. 6
Mar. 7	Perception: Vision & Audition	Ch. 7.1-7.3
Mar. 9	Pain, Chemical Senses, Attention/Consciousness	Ch. 7.4-7.6
Mar. 21	Sensorimotor System	Ch. 8
Mar. 23	Development of the Nervous System	Ch. 9
Mar. 28	Neuroplasticity	Ch. 10
Mar. 30	Learning & Memory	Ch. 11
Apr. 4	Exam 2	
Apr. 6	Motivation: Hunger	Ch. 12
Apr. 11	Motivation: Sex	Ch. 13
Apr. 13	Sleep & Dreams	Ch. 14
Apr. 18	Reward/Addiction	Ch. 15
Apr. 20	Cerebral Lateralization	Ch. 16.1-16.3
Apr. 25	Language	Ch. 16.4-16.7
Apr. 27	Emotion/Stress/Health	Ch. 17
May 2	Psychiatric Disorders	Ch. 18
May 4	Exam 3	
May 11 :	optional cumulative final exam	

The add and drop deadlines for classes:
Last day to add - Feb. 7th
Last day to drop - Feb. 24th