

PHYSIOLOGICAL PSYCHOLOGY
(Fall 2005)

Course: Psych 4650 01

Instructor: Michael Hulsizer

Location & Time: T R 12:00-1:20, 401 WEBH

Office Hours: 1:30 - 2:00 T R; or by appointment.

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Web Site: www.webster.edu/~hulsizer/

Prerequisite: 12 hours of psychology or permission of the instructor

Text:

Required: Pinel, J. P. J. (2005). *Biopsychology* (6th ed.). Boston: Allyn and Bacon.
Pinel, J. P. J., Edwards, M. (1998). *A colorful introduction to the anatomy of the human brain*. Boston: Allyn and Bacon.

Optional: Study Guide is available at the bookstore (free with bundle).

Purpose of the Course:

What is schizophrenia? How can we treat depression? What can we do to help those with Alzheimer's? Can we cure insomnia? What is colorblindness? How do drugs like cocaine, heroine, and alcohol impact the brain? How does stress and anxiety influence the body and behavior? These are all questions that can be addressed from the physiological psychology perspective. In fact, most any question we have about human behavior can be addressed at the biological level. As a result, the impact of the physiological perspective on psychology has been enormous. To really understand psychology, one has to understand the workings of the brain. In the course, we will explore the physiological correlates of behavior, more specifically the brain-behavior relationship. First, we will discuss the basic concepts of neuroanatomy, neurophysiology, neurochemistry, and neurotransmission. Secondly, we will use this information to examine the relationship of neural function/control of sensory and motor systems, motivated behavior (feeding, sex, aggression, and sleep), learning, memory, and psychopathology. The format of the course will be lecture, discussion, and film.

"The last frontier in this world --- and perhaps the greatest one --- lies within us. The human nervous system makes possible all that we can do, all that we can know, and all that we can experience. Its complexity is immense, and the task of studying it and understanding it dwarfs all previous explorations our species has undertaken." – Neil R. Carlson, *Physiology of Behavior*

Course Objectives:

- To achieve familiarity with basic facts, concepts and research methods in physiological psychology.
- To demonstrate an understanding of the physiological mechanisms underlying a variety of behaviors and psychological processes (schizophrenia, autism, depression, emotion, vision, movement, etc.) as they are currently understood by physiological psychologists.
- To become familiar with the many ways physiological psychology is being applied to help understand and solve every day problems.

Attendance: Regular attendance is strongly recommended. It is expected that you will attend every class period. I will be taking attendance at the beginning of a random number of classes. You will receive 10 points for “perfect attendance.” Perfect attendance is defined as missing less than two class periods during the course of the semester. Additional absences will negatively impact your grade. If you cannot attend class, you must see me beforehand with a written excuse. In the case of illness, you should always call me and present a medical excuse when you return to class. You are responsible for all material covered in class, including any announcements made in class, especially changes in the syllabus and exam dates. It will become apparent as we progress through this semester that regular attendance will greatly facilitate your reading of the text and your performance on exams. Exams will draw on both the text as well as material presented only in class. Your presence will also add a personal touch to your notes. See attached for more information.

Brain Games: There will be three Brain Games during the course of the semester. These will occur prior to exams 1, 2, and 3. They provide an excellent way for you to brush up on material to be presented on the respective exams.

Rules:

1. For each game, the class will be randomly divided into groups of 3 people. You will share notes during the game and work together with others in your group to answer questions and win points.
2. The only materials that you may use during the brain game are your coloring book and your notes. You will not be able to use your textbook. Brain Game #1 will cover Chapters 1,2,3; Brain Game #2 will cover Chapters 4,5,10,11; Brain Game #3 will cover Chapters 6,7,14,16.
3. During the game, you will use your knowledge of brain anatomy and functions of different parts of the nervous system to either locate the region of the brain involved in a particular case or "diagnose" what area of the brain is damaged based on behavioral symptoms that I will give to the group.
4. Each group member will earn points based on the number of correct points earned by the group. If your group answers incorrectly, the next group can "steal" the question. Each group will have the opportunity to earn 10 points. Groups can earn bonus points by "stealing" questions from another group.

Physiological Psychology Paper Assignment: In the later half of the past century, the pendulum shifted to a more biological/genetic approach to psychology. Thus, it is important that you leave this class with an understanding of the applications of this line of inquiry on major psychological approaches. One growing area in physiological psychology is the application of biological approaches to better understand psychopathology and the development of physiological-based treatments and approaches for understanding abnormal behavior. You are to research one of the following areas:

Schizophrenia, Bipolar Depression, Unipolar Depression, Social Phobia, Obsessive-Compulsive Disorder, PTSD, Panic Disorder, Drug Addiction, Huntington's, Alzheimer's, Parkinson's, Antisocial Personality Disorder, Stroke, Anorexia, Bulimia, Korsakov's Syndrome, Brain Tumors, Syphilis, Meningitis, Attention Deficit Disorder, Aggression, Prejudice, Autism, or another topic of interest to you (must be approved).

Select a topic that interests you and will provide an abundance of physiological information. You are to turn in a proposal describing the presentation **any time before class on October 11th**. I will only allow one student per topic (first come first served). Failure to turn in a proposal at that time will result in a zero for the paper (worth up to 75 points). **NO EXCEPTIONS**. I may require that you revise your proposal. If that is the case, you may not begin your project until a final proposal has been approved.

Mechanics: The paper is to be between 12-15 pages in length and should have a title page and a reference page. Figures may also be included. Please note the 12-15 page limit is for the body of your paper. Your title page, reference page, and any figures are in addition to this page limit. In other words, you may end up turning in a 15-20 page paper including your title page, figures, and references. The format of the paper is APA submission style (see the APA publication manual 5th edition available at the library or writing center). That is, you will need to have a proper title page, page headers, and page numbering. The references should all be in APA style.

I will reduce your paper by AT LEAST one letter grade if you do not use APA style!

The paper will investigate one of the aforementioned topics from a physiological psychology perspective. Consequently, your paper should have three sections: 1) The first section should describe the disorder – emphasizing the physiological antecedents of the disorder, 2) The second section should discuss biologically based treatment options, and 3) The final section should discuss how physiological psychology may aid future understanding and treatment of the disorder.

References should be from scientific journals or scholarly books. Do not include pop psychology books (Men are from Pluto, Women are from Jupiter) or magazines (Cosmo "Help! My boyfriend is suffering from a lesion to the medulla oblongata!"). You may only use books and journals. *No internet sites*. In addition, you must have a journal to book ratio of 5:1. That is five journal articles for every book you include in your reference page. I expect you will have *at least* fifteen references.

Physiological Psychology Paper Assignment (cont.):

Your paper should be written in font similar to that which you are reading (Times New Roman 12pt). The margins should be no larger than 1 inch all around (note that Word defaults to 1.25 inch margins – so change it to one inch). The spacing should be a standard double spacing. Don't try and fluff the paper up by expanding the margins, font, or spacing. It is rather obvious when the content is weak. The assignment is worth 100 points. Your paper is due at noon on December 15th. No papers will be accepted after 12:01pm on 12/15.

A hard copy and electronic copy of the paper must be turned in by noon on Dec 15th. The electronic copy will be submitted to an electronic database to check for plagiarism.

Plagiarism: Plagiarism is not acceptable and will result in a grade of zero for the entire assignment. In addition, the case will be turned over to the proper University source for disciplinary action. Plagiarism includes but is not limited to: claiming someone else's work as your own, turning in a paper (or portion of a paper) for which someone else did the work, turning in a paper (or portion of a paper) previously submitted for a grade in another class, quoting from another person without acknowledging the original source, copying from another student's paper or exam, allowing another person to copy your exam or paper. Please consult with the instructor if you are in doubt as to whether you are plagiarizing a source.

Ignorance or sloppiness is not an excuse for plagiarism.

Exams: Four exams will be given during the semester. Each exam will be worth 75 points. The format of these exams will be multiple choice, fill in the blank, matching, short answer, and essay. Exams will cover only the material presented since the previous exam. All of the exams will cover material presented in your text as well as material available only through class notes. Your presence in class will facilitate your performance on these exams. Tentative exam dates are listed on the back of this syllabus. Should any changes in these exam dates become necessary, I will inform the class in advance. Exams must be taken on the date scheduled. Make-up exams will only be administered in emergency cases (e.g., medical). The instructor must be notified in advance of the situations that exist. No make up exam will be given if the student fails to notify and discuss the situation with the instructor before the exam. If an exam is missed and no make-up is taken, a zero will be given for the grade. It is in your best interest to take the exams as scheduled.

Guidelines for Class Attendance

10 points	2 misses	4 points	5 misses
8 points	3 misses	2 points	6 misses
6 points	4 misses	0 points	7+ misses

Final Grade: Your final grade will be based on:

Four exams (300 possible points; 68.2% of final grade)

Paper assignment (100 possible points; 22.7% of final grade)

Brain Games (30 possible points; 6.8% of final grade)

Attendance scores (10 possible points; 2.3% of final grade)

My grading scale is as followed

90% - 100%	A-, A, A+	Superior work
80% - 89%	B-, B, B+	Good work
70% - 79%	C-, C, C+	Satisfactory work
63% - 69%	D, D+	Passing, but less than satisfactory
Less than 63%	F	Unsatisfactory

Any changes in this scale will be towards the lenient side.

Late Withdraws: No late withdraws will be approved on the basis of poor performance. They will only be granted in cases of emergency situations discussed with the instructor.

Miscellaneous:

If you have a disability that may have some impact on your work in this class and for which you may require accommodations contact the Director of the Academic Resource Center, Dr. Pat McLeese, at (314) 968-7495.

Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Academic Resource Center as soon as possible to ensure that such accommodations can be implemented in a timely fashion.

This syllabus is subject to change at any time at the instructor's discretion. Changes in exam dates may be verbally communicated to the class. It is understood that remaining in the course constitutes an agreement to abide by the terms outlined in this syllabus and acceptance of the requirements of this course.

How to do well

1. Attend class and participate. If you are here you will learn. Ask questions. You need to be an active part of the learning process.
2. Read the text before coming to class. This way you know what I am talking about.
3. After lecture, look over your notes and fill in any missing components.
4. It is expected that for every 1 hour of class you need to study at least 2 hours a week. That means you should spend 6 hours a week studying for this class.
5. The more you put into the class the more you will get out of it.
6. Make use of the writing center for your paper. Don't wait until the last minute to work on them.
7. Get to know people in the class....form study groups.

TENTATIVE SCHEDULE OF COURSE EVENTS (CB = COLORING BOOK)

Aug	23/25	Introduction/Genetics	Chapter 1/2
	30	Evolution, Genetics, and Experience	Chapter 2
Sept	1/6/8	Anatomy of the Nervous System	Chapter 3 (CB)
	13	Neural Conduction/Synaptic Transmission (BG #1)	Chapter 4 (CB)
	15	Exam I (Chapters 1, 2, 3)	
	20/22	Neural Conduction and Synaptic Transmission	Chapter 4 (CB)
	27	Research Methods	Chapter 5
Oct	29/4	Brain Damage & Neuroplasticity	Chapter 10 (CB)
	6/11	Learning, Memory and Amnesia (Prop Due 10/11)	Chapter 11 (CB)
	13	Visual System (BG #2)	Chapter 6 (CB)
	25	Exam II (Chapters 4, 5, 10, 11)	
	27	Visual System	Chapter 6 (CB)
Nov	1/3	The Rest of the Senses	Chapter 7 (CB)
	8/10	Sleep and Dreaming	Chapter 14 (CB)
	15	Lateralization	Chapter 16 (CB)
	17	Drug Addiction (BG #3)	Chapter 15
	22	Exam III (Chapters 6, 7, 14, 16)	
	24	Drug Addiction	Chapter 15
Dec	29/1	Biopsychology of Emotion, Stress and Health	Chapter 17
	6/8	Psychiatric Disorders	Chapter 18
	13	Final Exam (Chapters 15, 17, 18) 10:30 am – 12:30pm Paper is Due 12/15 (noon)	

COLORING BOOK "READINGS"

Sept	1/6/8	Anatomy of the Nervous System 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 4.4, 5.1, 5.2, 5.3, 5.4, 5.6, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 7.1, 7.2, 7.3, 7.6, 7.7, 7.8, 9.5
	13/20/22	Neural Conduction and Synaptic Transmission 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Sept/Oct	29/4	Human Brain Damage 9.6, 10.5
Oct	6/11	Memory and Amnesia 10.1, 10.2, 10.3, 10.4, 10.5
	13/27	Visual System 8.1, 8.2
Nov	1/3	The Rest of the Senses 8.3, 8.4, 8.5, 8.6
	8/10	Sleep and Dreaming 11.5, 11.6
	15	Lateralization 12.1