Syllabus

See also: Block Schedule 1| Block Schedule 2 | Block Schedule 3

Psychology 320: Topics in Physiological Psychology

Professor: Michael J. Mana, Ph.D. (Office / Phone / Email)
Office Hours: Mondays 10:00 - 11:30 am and Tuesdays 9:00-10:00 am or by appointment
Class Times: Lectures: M /W/ F, 8:30-9:50 am, OM 330-A
Core Text: *Neuroscience: Exploring the Brain*, 2nd Edition (Bear, Connors & Paradiso)

I will use Blackboard to provide you with lecture notes, links to interesting sites on the web, sample exams, and a weekly quiz. In addition, Blackboard provides an electronic forum that you may find useful for discussing the course material, forming study groups for exams, and general kibitzing.

Aim and Scope: Over the next 10 weeks, we will examine a variety of research topics and issues that fall under the guise of physiological psychology...or biopsychology…or behavioral neuroscience. The initial 2-week block of lectures will focus on neuroanatomy and the development of the nervous system. Subsequent blocks will focus on issues related to reward and substance abuse; the neurobiology of emotion; the neural bases of learning & memory; and the neurobiology of major mental illness.

One of the main goals of this class is to familiarize you with research in different areas of physiological psychology, and to begin to develop the skills required to effectively evaluate such research. To this end, the last class in each block will require you to read, analyze, and discuss an original research paper related to the topic that we have been discussing.

A Caveat and Digression...

The Caveat: Before enrolling in this class, you should have already successfully completed Psychology 220, Introduction to Physiological Psychology, or its equivalent. If you have not, please withdraw from this class now…you will NOT receive a grade for this course.

The Digression: Every instructor says "You will benefit greatly by reading the assigned material before class!", so I won't bother. What I will say is that the material in this class can be pretty dense. If you read the assigned material before lecture and you are confused, please bring your questions to class. If you read the material after a lecture and are confused, see me as soon as possible or bring your questions to class. Whatever you do, don't wait until the night before an exam to crack the books and figure out that you are confused....that would just be plain silly!

Special Learning Requirements: If you have any special learning or testing requirements, please see me during the first week of classes so that these needs can be accommodated.

Lecture Notes: An outline of the lecture notes will be provided on the Blackboard website for this class. Where possible, I will also supply links, images and other goodies that I use in class on this site.

Teaching Objectives & Learning Outcomes:

Over the course of the next 10 weeks, the lectures, discussion and assignments should help you to understand:

1) the embryological development of the nervous system, especially the brain.
2) the different research approaches used by physiological psychologists.
3) the basic functional characteristics of the central nervous system.
4) the role that nature AND nurture play in the development of the brain and behavior across the lifespan.
5) the interplay of brain and behavior in major mental illness.

Armed with this knowledge,by the end of the quarter you should be able to:

1) think critically about the biological bases of your behavior…for example, the brain regions that are involved in your morning quest for the perfect mocha, your afternoon run, your short temper, or your ability to recognize faces!
2) critically read and evaluate primary research articles in physiological psychology, and articulate your understanding to your peers in both an APA-approved written format and in an oral presentation.

3) relate therapeutic interventions to the suspected neuropathology underlying major mental illness.
4) appreciate the basic brain mechanisms that appear to underlie the psychological concepts of learning, memory and cognition.

> *Lecture material will be presented in 2-3 week blocks consisting of 6-8 lectures each. The material for the first block of material has already been determined…however,* ***there is flexibility in the material for the remaining 7 weeks of quarter****. This means that YOU can help to determine the content for the course in the final 3 blocks of material…if there is an area of particular interest to you, voice this interest on the web-based Blackboard Discussion group over the next 2 weeks. If there is enough interest I will include this topic in the appropriate block of the syllabus.*

Examinations and Grading: A total of 80% of your grade will be based upon 2 in-class exams (each worth 20% of your final grade); a single 5-page mid-term paper (worth 20% of your final grade); and a poster presentation during the last week of class (worth 20% of your final grade). The final 20% of your grade will be based upon your active analysis and exposition of the biweekly target articles and in your participation during the end-of-term poster session. Each assignment is described in more detail below.

If you have a legitimate excuse for being absent when an assignment is due, **CONTACT ME AS SOON AS POSSIBLE**! Before the due date, if that is possible; otherwise, as soon as you can. If you wait longer than 24 hr to contact me, you will be assigned a grade of **ZERO** for that assignment regardless of the reason that you might have. If I am not in my office, leave a message on my machine AND email me. If I have not contacted you by the end of the day, phone the main office of the Psychology Department (650-3515) and leave a message.

If you can take an exam before grades have been returned to the class, you may take the same exam as the rest of the class. If you cannot take an exam before it is returned, I will provide you with an alternative (e.g., an oral exam) at a time when you are able to take it.

N.B. If you miss an exam or assignment because you are sick, you **MUST** provide a Doctor's note and phone number. If you miss an exam or assignment because you have a family emergency, it must be verified by the Office of Student Affairs (OM 390, ph. 650-2833).

> ***LEGITIMATE EXCUSES*** *include personal medical leaves of absence (signed doctor's note required) or a death in the family.* ***THEY DO NOT INCLUDE NEW POWDER ON BAKER, AN EARLY DEPARTURE FOR AN EXTRA-LONG WEEKEND, ANOTHER EXAM ON THE SAME DAY (though 2 exams will do it!), or ANY FORM OF AMNESIA****.*

Exams: (40 % of grade; 20%-20%) The exams will be a combination of multiple-multiple choice questions, modified true/false and fill-in-the-blank questions, diagrams, and/or essays. Essays will be graded for content, organization, reasoning, clarity, and grammar. Examination questions will be derived from all readings and lectures assigned in the syllabus and/or discussed in the class.

Exam Dates*: Monday, February 2nd and Friday, March 5th*

Term Paper: (20% of grade) The term paper should review an area of biopsychological research that is interesting to you AND APPROVED BY ME. You should choose a topic and develop a 1-page outline as early in the quarter as possible, but no later than January 16th, 2004. You may also submit a rough draft for my comments by no later than January 30th, 2004. ***I will read these on a first-come, first-done basis AS TIME ALLOWS, so if you wait until the last day to hand it in chances are good that your draft will not receive the attention that it deserves.*** The final draft should be no longer than 5 pages of text (double-spaced, 12 point Times-Roman or similar font); written in APA format; and based solely upon peer-reviewed sources. Term papers are due no later than February 13th, 2003.

Poster Assignment: (20% of grade) The poster assignment will be presented during the last week of the quarter. It will involve a prepared poster-style presentation in which you will present a biopsychology research paper (a data paper, not a review) that was included in your term paper assignment. We will spend a class discussing poster preparation and presentation; the actual preparation of the poster will occur outside of class time. Your grade for the poster will be based on the simplicity, clarity, style (Hint: hand-drawn material is generally not the way to go!) and thoroughness of your presentation and the way that you handle questions from your peers.

Classroom Participation: (20% of grade; 5%-5%-5%-5%) At the end of each block of material, we will have a classroom discussion in which we dissect an original research paper focusing on some area within biopsychology. In each of these classes, YOU will be expected to read and analyze the assigned paper and come to class prepared to discuss the paper. Your analysis and discussion issue should be written down prior to class; I will collect these analyses and assign you a grade based on how thoughtful and well-presented your arguments are during the class discussion **and** on paper.

The final forum for your classroom participation will occur during the poster sessions at the end of

the quarter. Poster presentations play an important role in the dissemination of information at most scientific meetings…and a key role is played by both presenter and audience during a poster session. After you ask a question or make an observation during a poster presentation, you should write your question/observation down and submit it to me at the end of class.

A Note about Plagiarism:

Learning to write a research paper is one of the primary goals of this course. One of the cardinal sins when writing a research paper…or any kind of paper, for that matter…is to plagiarize. What is plagiarism? Western Washington University's Student Bulletin (see Appendix D, pp. 348) defines it as:

> "…presenting as one's own in whole or in part the argument, language, creations, conclusions, or scientific data of another without explicit acknowledgement. Examples include, but are not limited to:
>
> 1) Using another person's written or spoken words without complete and proper citation.
> 2) Using information from a World Wide Web site, CD-ROM or other electronic source without complete and proper citation.
> 3) Using statistics, graphs, charts and facts without acknowledging their source.
> 4) Submitting a paper purchased from a term-paper service.
> 5) Paraphrasing, which is imitating someone else's argument using other words without acknowledging the source.
> 6) Claiming credit for someone else's artistic work, such as a drawing, script, musical composition or arrangement.
> 7) Using someone else's lab report as a source of data or results.
> 8) Using one's own or substantially similar work, produced in connection with one course, to fulfill a requirement in another course without prior permission. A student may use the same or substantially the same work for assignments in two or more courses only with written permission from the instructors of all the classes involved."

If you are caught plagiarizing, you will receive a grade of "0" for the assignment; depending upon the exact circumstances, you may also receive an "F" for the entire course. This is a real drag for both of us, SO PLEASE DON'T DO IT! If you have questions about plagiarism, please ask me or contact Western's Writing Center (WL 389, 650-3219, http://www.ac.wwu.edu/~writepro).

Psychology 320: Topics in Physiological Psychology
Class Schedule for Block One

Wednesday, January 7th: SNOWED OUT!! 8(

Friday, January 9th: Introductions…And An Overview of Class Requirements.

You should also become reacquainted with the cellular basis of the nervous system; read Bear et al., Chpt. 2, pp. 22-49.

Monday, January 12th: The Human Brain: Gross Anatomy.

Readings: Bear et al., Chapter 7, pp. 163-175; pp. 193-201.

Become familiar with the "Human Neuroanatomy CD" that accompanies your text.

Wednesday, January 14th: Neural Development: Development of the Neuraxis.

Readings: Bear et al., Chapter 7 pp. 175-193.

Friday, January 16th: Neural Development: Neurogenesis and Synaptogenesis.

Readings: Bear et al., Chapter 22, pp. 704-722.

N.B. Outline for term paper due today…

Monday, January 19th: NO CLASS TODAY…MARTIN LUTHER KING HOLIDAY

Wednesday, January 21st: Neural Development: Activity-Dependent Changes in the Brain.

Readings: Bear et al., Chapter 22, pp. 722-731.

Friday, January 23rd: CRITIQUE OF TARGET ARTICLE.

Van Praag, H., Christie, B.R., Sejnowski, T.J. and Gage, F.H. (1999). Running enhances neurogenesis, learning, and long-term potentiation in mice. Proceedings of the National Academy of

Sciences, 96 (23), pp. 13247-13431.

This article is available on-line from Western's Library System; the link is available from the Blackboard website. If you can, print in .pdf format (it will look like the original journal article then) and from a color printer (the figures will look much nicer).

Printer Friendly Version