

Dept. of Biological Sciences, California State University, Los Angeles
Brain and Behavior, BIOS 158, Section 1
Winter Quarter, 2005

Mon Wed 4:20 pm – 6:00 pm

Place: Bio.Sci.

Instructor: Michael Chen, Ph.D.

e-mail: mchen@calstatela.edu

Office: Biol.Sci. 128

Office Hours: Mon Wed 3:15-4:00 pm

or by appointment

Course Description: This course is an Introduction to Neuroscience, which is the study of the nervous system and how it influences behavior. Specifically, this course will provide an introduction to the structure and function of the brain and the rest of the nervous system and its output – behavior. We will address topics such as personality, emotions, and learning and memory. This course is a lower-division science course for General Education Theme B3: Application of Science and Technology to human beings and their concerns.

Prerequisite: None.

Textbook: **Rosenzweig, M.R., Breedlove, S.M., Watson, N.V.**

Biological Psychology: An Introduction to Behavior and Cognitive Neuroscience,
Sinauer Associates: Sunderland, MA, 2005. ISBN: 0-87893-754-4.

SCHEDULE

Date	Topic	Reading Assignment
Jan 3	Introduction, Origins of Neuroscience, History Neuroanatomy, Organization of the Brain and Nervous System, Hierarchies; Building blocks of the Nervous System.	Chapter 1, 2
Jan 5	Library Use. Meet in Library Room B526.	
Jan 10	Neurophysiology: Conduction, Transmission and Integration of Neural Signals.	Chapter 3
Jan 12	Chemical Basis of Behavior: Neurochemistry and Neuropharmacology. Term paper topic has been chosen.	Chapter 4
Jan 17	MLK Day – No Class	
Jan 19	Neuroendocrinology: Hormones and the Brain. Preliminary Reference list is due.	Chapter 5

Jan 24	Evolution of Brain and Behavior. Article Summary 1 is due.	Chapter 6
Jan 26	Midterm Exam 1 on Chapters 1-6.	
Jan 31	Brain and Behavior Development across the Lifespan.	Chapter 7
Feb 2	General Principles of Sensory Processing: Touch and Pain. Article Summary 2 due.	Chapter 8
Feb 7	The Auditory and Vestibular Systems, Taste and Smell.	Chapter 9
Feb 9	The Visual System.	Chapter 10
Feb 14	The Motor System and Disorders.	Chapter 11
Feb 16	Sex, Evolutionary, Hormonal, and Neural Bases	Chapter 12
Feb 21	Midterm Exam 2 on Chapters 7-12. Optional Rough Draft of Term Paper due.	
Feb 23	Homeostasis: Active Regulation of Internal States.	Chapter 13
Mar 2	Biological Rhythms, Sleep and Dreaming.	Chapter 14
Mar 7	Emotions, Aggression, and Stress.	Chapter 15
Mar 9	Psychopathology: Biological Basis of Behavioral Disorders.	Chapter 16
	Final Draft of Term Paper due.	
Mar 14	Biological Basis of Learning and Memory.	Chapter 17
Mar 16	FINAL EXAM (material since Midterm 2) 4:30 – 7:00 pm.	

<u>Course Requirements</u>	<u>Points</u>	<u>Percentage</u>
Midterm Exam 1	75	22.06 %
Midterm Exam 2	75	22.06 %
Article Summary 1	20	5.88 %
Article Summary 2	20	5.88 %
Term Paper	75	22.06 %
Final Exam	75	22.06 %
Total	340	100 %

Final Course Grades

Final grades will be on a percentage or on a curve, depending on the general overall performance of the class. However, this does not apply to scores near or lower than 170 points. All scores near or lower than 170 points will be considered failing.

Exams

All 3 exams will be a mixture of multiple-choice and short answer formats. Students are expected to read the textbook and attend the lectures.

Article Summaries

Each writing assignment will be penalized 2 points for every class day they are late. So, for example, Writing Assignment 2 is due on Feb 2; but if you turn it in on Feb 9, it will be penalized 4 points (2 points x 2 class periods that have passed).

Term Paper

As a result of the hands-on training for using the library's electronic data bases (January 5), you will write a scientific term paper.

You may choose any topic you wish that is relevant to the biological bases of behavior. Some examples might be: Alzheimer's Disease, Depression, Stress, Addiction, Eating Disorders, Schizophrenia.

Write a 5-10 page, typed, double-spaced, scientific review paper of the topic based on a search of the biological and medical literature. You may use a review article or book to help you understand the topic as well as become aware of recent advances in the your topic field. Then, write your paper using 5-10 state-of-the-art research articles. Use MEDLINE (PubMed) to do your search; the references listed in this database are all biological or medical. Do not use popular and unreviewed sources, such as *Time*, *Newsweek*, or *Prevention* magazines or newspapers, or potentially any other periodical that can be found on bookstore newsstands. **These are unacceptable!** You may use the internet, but the literature sources *must* be from professional, peer-reviewed journals. If

you have not done this kind of search before, ask the librarians to show you how or ask me. Use a word-processor because you will be handing in the paper for review and you are expected to revise the paper before handing in the final version.

Reference Format: A list of the sources you cite in your paper, in alphabetical order by author surname, should appear at the end of your text. Use the format adopted by the Council of Biological Editors as indicated in the following examples.

Content:

I will use the following criteria to evaluate your term papers:

Accuarate understanding of the material (20%), appropriate use of sources (15%), proper format (5%), professional presentation (5%), creativity or originality (10%), accuarate documentation (15%), logical arguments (10%), proper use of terminology (10 %), appropriate style (5%), grammar and mechanics (5%).

Write the paper in a scientific style. Each paragraph should have a topic sentence and all paragraphs should have more than one sentence. Use the articles you are reading for your article summaries as models. Be concise. Do not use personal experiences or life histories and accounts in this paper. And do not write in the first person.

Optional draft of term paper (*hard copy*) is due on Feb 21. I will evaluate your term paper, critique it, and provide suggestions for improvement before turning it in for a final grade. The purpose of the draft is to get you to start working on your term paper early, without procrastination and to improve your writing skills and improve your grade.

Final revised term papers should be turned in on March 9. They must be accompanied by a copy of the first version of the paper with the suggested revisions on it. All the material will be returned to you after it has been graded. Please turn in your papers directly to me in class. Do not leave them in the departmental office or in envelopes under doors. If your paper is lost because you gave it to someone other than myself, you will get zero credit for the assignment.

ARTICLE IN A JOURNAL:

All Authors (surname first followed by initials). 2000. Title of the article in full. Journal Name volume # :staring page-ending page.

For example:

Klau M, Hartmann M, Erdmann KS Heumann R, Lessmann V. 2001. Reduced number of functional glutamatergic synapses in hippocampal neurons overexpressing full-length TrkB receptors. Journal of Neuroscience Research 66:327-336.

BOOK:

Jones JJ. 2001. Book Title volume (if any). City of publication:Publisher

CHAPTER IN A BOOK:

Smith ME, 2002. "Title of Chapter" in: Jones JT (ed.), Book Title. City of Publication:Publishers, pp. Starting page-ending page.

SOURCE ON THE INTERNET:

Pritzker, TJ (No date). Title of internet text [Online]. Available: <http://www.list> complete internet address [date you accessed the site]. Please note: not all internet sites are acceptable sources; some are popular, not scientific sites. Before using an internet site as a source, show it to me for approval.

All references should be cited in the appropriate section of the text by author surname and year of publication, as in the following examples:

"Doe and Smith (1992) found that ..." (Your reference list should include an entry for Doe and Smith using the appropriate format above)

OR

"One study on changes in the immune system (Doe and Smith, 1992)..."

If the reference has one or two authors, use the one or both names followed by the year for citations in the text, such as:

"Garcia (2003) found that..."

OR "Garcia and Popoli (2001) found that..."

Similarly, "...blah, blah, blah (Garcia, 2003)"

OR "... blah, blah, blah (Garcia and Popoli, 2001)."

If the reference has more than two authors, use the first author only, followed by *et al.*, such as:

"...blah, blah, blah (Klau *et al.*, 2001)."

If you use an author's surname in the text, you must have a reference by that person in the reference list or else points will be deducted from your score. In other words, make sure that every citation in the text of the paper appears in the bibliography at the end of the paper and *vice versa*.

Do not use footnotes in the text! And do not cite references by using numbers in the text!

If you want to quote a person *verbatim*, indent and single-space the quoted material and list the author(s), name(s) and the year at the end of the quote. It is better not to quote, but to summarize in your own words. Do not fall into the trap of making your paper simply a series of quotations!

You must have at least 5 references from biological and medical journals. Bring a list of references to class on Oct 25 for my approval. The references should be to articles published within the past 5 years. Do not base your term paper on only books. And, as I indicated above, do not use the popular press.

Attitude

Your class attendance is *very* important. I don't take roll, but it is well known that there is a good relationship between good attendance and the final grade. Occasionally, there are times when you might be forced to miss a class. If this is the case, it is your responsibility to get from a classmate *all* the information you missed. Please do not contact me and ask what you may have missed – this is tantamount to having me repeat the lecture, *etc.* all over again. I strongly urge you to make some friends in the class and obtain from them any class material you might have been forced to miss.

Your responsibility is to the lectures. Please ensure that if you have with you a cellular phone, pager, or some other fancy electronic communication device, that it does not sound off. I find it very disruptive to the class and to me. I like to start on time and I find it distracting and disruptive for people to arrive late and just as annoying for people to wander in and out of class at any time. It is unfair and distracting to the other students in the class and to everyone's train of thought. Students are asked to refrain from making inappropriate or offensive comments, sleeping, talking/whispering/giggling with peers, or passing notes. You are all adults and are no longer in high school. A mature attitude is, therefore, expected of you.

Academic Honesty

The CSU does not look favorably upon breaches of academic honesty, including, but not limited to, plagiarism (stealing work not your own from someone else), copying each others' assignments, cheating on exams, *etc.* Penalties will be dealt with by the University Provost and you will receive a failing grade for that particular assignment/exam, and possibly the course.

JUST DON'T DO IT – IT'S NOT WORTH IT!!