

Physiological Correlates of Behavior
 Lucero-Wagoner
 Text: *Biological Psychological*
 James W. Kalat
 Wadsworth, 2004

Spring 2004 #95020

Tuesday/Thursday
 SH 342 9:30 a.m. – 11:00 a.m.
 Office hours: Th 11:30 – 12:30 p.m.
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 Website: <http://www.csun.edu/~vcpsy00i/index.html>

Men ought to know that from nothing else but the brain come joys, delights, laughter and sports, and sorrows, griefs, despondency, and lamentations. And by this, in an especial manner, we acquire wisdom and knowledge, and see and hear and know what are foul and what are fair, what are bad and what are good, what are sweet and what are unsavory. And by the same organ we become mad and delirious, and fears and terrors assail us.... All these things we endure from the brain when it is not healthy.... In these ways I am of the opinion that the brain exercises the greatest power in the man. -Hippocrates, On the Sacred Disease (Fourth century B.C.)

PREREQUISITES: PSY 150 (Principles of Human Behavior)

TU	LECTURE	READING
02/03	Introductory remarks What do biopsychologists do?	Ch 1 pp 1 – 27 Ch 4 pp 74 - 79
02/10	What is biopsychology HOMEWORK 1 DUE	Ch 1 pp 1 - 27
02/17	Anatomy of the N.S.	Ch 4 cont'd
02/24	EXAM 1	Ch 1, 2, 4
03/02	Action potentials	Ch 2 pp 42 - 50
03/09	Synaptic transmission HOMEWORK 3 DUE	Ch 3 pp 53 - 72
03/16	Neurotransmitters & drugs	Ch 15 pp 452 -463
03/23	EXAM 2	Ch 2, ,3, 15
03/30	Lateralization	Ch 14 pp 420- 432
04/06	Spring Break	
04/13	Sensory system – Vision Color theories	Ch 6 pp 144 – 156 pp 169 – 183
04/20	Movement (film)	Ch 8 pp 228-257
04/27	EXAM 3	Ch 6,7,8,9,14
05/04	Emotional behavior	Ch 12 pp 256-385
05/11	Depression	Ch 15 cont'd
05/18	Schizophrenia HOMEWORK 6 DUE	
05/25	Final exam	8:00 a.m.

TH	LECTURE	READING
02/05	Anatomy of the N.S.	Ch 4 pp 80 - 103
02/12	Anatomy of the N.S.	Ch 4 pp 80 - 103
02/19	Cells of the CNS HOMEWORK 2 DUE	Ch 2 pp 29 - 38
02/26	Cells Membrane potentials	Ch 2 pp 29 - 38 Ch 4 pp 39 - 42
03/04	Action potentials	Ch 2
03/11	Synaptic transmission	Ch 3
03/18	Neurotransmitters & drugs HOMEWORK 4 DUE	Ch 15 pp 343 - 370
03/25	Sleep	Ch 9 pp 271-291
04/01	Language	Ch 14 pp 430- 450
04/08	Spring Break	
04/15	Other sensory systems – pain + attention	Ch 7 pp 201-207 pp 219-225
04/22	Movement (film) HOMEWORK 5 DUE	Ch 8 pp 228-257
04/29	Development & Plasticity	Ch 5 pp 107-139
05/06	Depression	Ch 15 pp 464-472
05/13	Schizophrenia	Ch 15 pp 476-491
05/20	Makeup exams	
05/27		

EXAM SCHEDULE: 02/04 EXAM 1 CH 1, 2 (pp 29 to 38), 4
 03/23 EXAM 2 CH 2 (pp 39 to 52), 3, 15
 04/27 EXAM 3 CH 6, 7, 8, 9,14
 05/20 MAKE-UP EXAM (As appropriate)
 05/25 FINAL EXAM CH 5, 12, 15) (8:00 a.m. to 10:00 a.m.)

You will have 75 minutes for all exams. Each 50 point exam consists of 35 multiple-choice items and 3 to 5 short-answer essay questions. Multiple-choice items are worth one point each; short-answer essay question may vary in point value, but collectively are worth 15 points. ALL makeup exams are scheduled during the lecture period of review day (May 20).

DESCRIPTION OF COURSE STRUCTURE:

Nothing can be more relevant to your career goals as a psychologist, or to the understanding of your daily life, than the understanding of the functions of the nervous system. All thought and action, everything you imagine, every memory and emotion, hunger and thirst, sex drives and, perhaps, your sexual preference are the consequence of nervous system activity. This course is designed to give you an appreciation for the relationship between nervous system activity and behavior. At the end of this course you will have a better understanding of how the brain operates and how research in the neurosciences is being conducted to unveil the intricacies of the nervous system and its role in the control of behavior.

We will begin the course with a brief history of the field and a description of the methodologies employed by neuroscientists. Next, we will spend several lectures on neuroanatomy and on the structure and function of neurons, the basic cell in the nervous system. Lectures on membrane potentials, action potentials, and synaptic transmission will be concerned with explaining how neural cells communicate with one another and transmit information throughout the nervous system.

Once neural behavior is better understood, we'll progress to discussion of the physiological mechanisms involved in drug abuse and addictive behaviors. Information about sensory systems and motor behavior will be presented next and will be followed by discussions of the brain mechanisms involved in sleep. The next series of lectures will explore the anatomy, physiology of language followed by lateralization of function, that is, the special functions of the two hemispheres. The final weeks of the term will be concerned with emotion and the biological bases of two mental disorders: schizophrenia and depression.

COURSE OBJECTIVES:

1. To describe the structure and function of neurons and glia
2. To learn the major parts of the brain and how they relate to behavior
3. To explain the ionic events underlying the resting and action potentials
4. To differentiate between graded and action potentials and to understand the role of neurotransmitters in the nervous system
6. To explain the events underlying synaptic transmission and how drugs may alter communication in the nervous system
7. To understand the neural and/or hormonal bases of selected behaviors.
8. To explain the neuronal basis of sensory and motor processes
9. To read and interpret the results of contemporary research in behavioral neuroscience and psychophysiology.

STRATEGIES FOR SUCCESS IN THIS COURSE.

Although there is a great deal of information to master in this course, you can minimize stress and maximize learning by reading the text before my lecture on a particular topic. This is important for two reasons: (1) my lectures are designed to supplement the text, and (2) I often present information from current research that may not be covered in the text. If you haven't already read the assigned chapters, you may not be able to see how this new information is integrated with the subject matter presented in the text.

I have tried to structure my lectures to emphasize the more important elements of the chapters and to schedule the exams at regular intervals. If you keep up with the reading and distribute your studying throughout the semester, the workload will be manageable and the semester will be much more pleasant and rewarding. A good rule of thumb is to consider the University Carnegie unit to which all classes should conform. The Carnegie unit specifies that you should spend two hours in study time outside of class for each hour spent in class. Because this is a 3-unit course, you should plan to spend a minimum of 6 hours per week reading the assigned chapters and reviewing lecture material .

RESEARCH PARTICIPATION

The Psychology Department requires all students enrolled in PSY 250 to participate in 1.25 hours or 5 credits (15 minutes=1 credit) of service as a research participant. This participation is designed to introduce students to the experimental research process and to provide a service to researchers conducting scientific experiments at this university. *Students will receive an incomplete for the course if this obligation is not met even when they are passing the course and have fulfilled all other requirements.* Students who are under 18 years of age or who cannot fulfill this requirement for other reasons are offered an alternative assignment that will take about 1.25 hours to complete. More detail about this requirement will be provided later in the course.

GRADE DETERMINATION

Your grade is determined by your performance on the four equally weighted exams, six homework assignments and random in-class assignments.

The point values for these elements of your grade are as follows:

Exams:	200 points
Homework:	100 points
Random in-class assignments:	<u>20 points</u>
Total points possible:	320 points

Your scores will be summed and letter grades assigned according to the following percentages:

288 – 320 points (90 to 100%)	will earn A's (+/-)
256 – 287 points (80 to 89%)	will earn B's (+/-)
224 – 255 (70 to 79%)	will earn C's (+/-)
192 – 223 (60 to 69%)	will earn D's, (+/-)
< 191 (0 to 59%)	will earn F's

MAKE-UP EXAM POLICY

On occasion, emergencies arise that prevent one from taking a scheduled exam. If this happens, you will be scheduled to take a makeup exam during the last week of the term. This policy does not apply to the final exam, which must be taken as scheduled. In order to be eligible to take a make-up exam you must notify the instructor that you will be unable to take the exam as scheduled PRIOR TO the administration of the exam. This notification may be given in person, via email message, or it may be transmitted through the departmental secretarial staff by phone (818- 677-2827). Once you have satisfied this requirement, your name and the number of the exam missed will be placed on a list that will entitle you to take the make-up exam on May 20. Note well that you may take ONE and ONLY ONE exam on that day. If you miss more than one exam during the semester, you will be assigned a zero for one of them and your grade will be calculated accordingly. Should you miss the make-up exam, you will be assigned a zero for that exam in the determination of your grade.

NOTE: ALL MAKE-UP EXAMS ARE SCHEDULED FOR May 20, 2004.

Homework Assignments	Due date
#1 Logic of Biopsychology (bring 2 copies) Send an email message to blw@csun.edu	February 10, 2004
#2 Brain figure labeled (bring 2 copies) Brain evolution table (bring 2 copies)	February 19, 2004
#3 Membrane potential problems (bring 2 copies) Important points (bring 2 copies)	March 09, 2004
#4 Drugs and their effects (bring 2 copies) Important points (bring 2 copies)	March 18, 2004
#5 Important points (bring 2 copies)	April 22, 2004
#6 Important points (bring 2 copies)	May 18, 2004

This syllabus is subject to revision with notice.