

PSYCHOLOGY 461: NEUROPSYCHOPHARMACOLOGY
SPRING 2007 SYLLABUS

Instructor: Keith A. Trujillo, Ph.D.
318 University Hall
Phone: 750-4183
E-mail: keith@csusm.edu

Lectures: Tuesdays and Thursdays, 10:30 - 11:45
315 Academic Hall

Office Hours: Tuesdays 1:00 – 2:00 (or by appointment)

Teaching Assistant: Brian Sullivan
E-mail: sulli023@csusm.edu
Office Hours: by appointment

Course Purpose and Content:

The purpose of this course is to explore the ways that drugs affect the brain and behavior. The emphasis will be on psychoactive drugs, including antipsychotics, mood stabilizers, antidepressants, anxiolytics and drugs of abuse. Although social, cultural and political aspects of drug use will be briefly touched upon when appropriate, the primary focus of the course will be neurobiological and behavioral effects of drugs. The content will range from general principles of neurobiology and pharmacology to the actions of specific classes of drugs.

Prerequisites:

PSYC 360 (Biopsychology) or consent of instructor. **STUDENTS WHO HAVE NOT HAD APPROPRIATE PREREQUISITES NEED TO SPEAK WITH ME IMMEDIATELY.**

Required Textbooks:

• *Psychopharmacology: Drugs, the Brain, and Behavior*, J.S. Meyer and L.F. Quenzer, Sinauer Associates: Sunderland, MA, 2004.

This is a comprehensive textbook on the current state of knowledge regarding drugs, the brain and behavior. It is written at an advanced undergraduate level and offers good coverage of this topic. This is the primary textbook for the course, and as such, you will be responsible for all of the assigned material in the book. Read the assigned chapters *before* coming to class to familiarize yourself with the material (I know everybody says this, but you're likely to be lost in this class unless you do the reading before you show up). Read the chapter a second time after class to firm-up what has been discussed.

Required WWW Page:

• *PSYC 461: Neuropsychopharmacology*, K.A. Trujillo, <http://courses.csusm.edu/psyc461kt/>

The syllabus and links to other important information relevant to the course will appear at this site.

Required CD-ROM

• *Foundations of Behavioral Neuroscience*, U. Hasson & Y. Shavit; Worth Publishers, 2000.

This CD-ROM presents animations of some very important brain processes -- processes that you will be expected to know for this class, including the neural membrane and resting potential, the action potential, the actions of ion channels and receptors, and synaptic transmission. Although much of this material is available in biopsychology textbooks, the CD-ROM adds the valuable dimension of animation to enhance your understanding of these processes. Although you are not required to purchase the disk, you will be responsible for knowing the assigned material.

Readings:

In addition to the textbooks, recent scientific articles relevant to the topics covered in class will be placed on reserve in the CSUSM library or on the course web site. You will be responsible for the material in these articles.

Assignments:

There will be five homework assignments, which will be described in class. All written work must APA style, double-spaced with 1" margins, and use the font "Times" 12 point (the font used in this syllabus). **Homework assignments are due at the beginning of class on the due date. If they are turned in after class begins, five points will be deducted from the grade, up until 5 pm on that date. No assignments will be accepted after the due date.**

In addition to these homework assignments, there will be a presentation, which will be described later.

Exams:

There will be five exams: four regular mid-term exams (multiple choice, short answer and essay questions) and a comprehensive final. **YOU MUST SHOW UP FOR EACH EXAM. MAKE-UP EXAMS WILL NOT BE GIVEN.** If an emergency prevents you from taking an exam, please contact me as soon as possible.

Grading:

Your final grade will be based on the exams, the homework and participation. The point distribution is as follows:

Midterm Exams (4 x 50 pts)	200 pts
Final Exam	100 pts
Homework (5 x 25 pts)	125 pts
Presentation	50 pts
<u>Participation</u>	<u>25 pts</u>
TOTAL	500 pts

Participation points are earned by coming to class prepared *and* contributing to ongoing discussions. Simply showing up to class, but not contributing will earn you a poor participation grade. Similarly, if you miss class sessions routinely arrive late to class you should expect a poor participation grade.

There will be other opportunities to earn points during the semester that will contribute to your point total. Many of these opportunities will require knowledge of the material before attending class (another good reason to read the assigned chapters and articles before class). Pay attention during class for these opportunities.

The grade distribution will be based on the top two scores in the class. The mean of the top two scores will be designated as maximum possible points, and the grades distributed as follows (with pluses and minuses at appropriate break points):

A range	above 90% of maximum possible points
B range	80.0 - 89.9%
C range	70.0 - 79.9%
D range	60.0 - 69.9%
F	below 60%

Helpful Comments:

This is a difficult class, but one in which you should expect to be successful, as long as you put in the effort. It is important that you attend all class sessions and contribute to class discussions. This can only be done if you read the assigned material ahead of time and come to class *well-prepared*.

Here are some additional helpful comments from the CSUSM Psychology Student Handbook:

Student Responsibility Code

- 1. You are responsible for knowing university and psychology program policies and deadlines.** You should obtain and read pertinent sections of the General Catalog, Class Schedule, the Psychology Student Handbook, and class syllabi.
- 2. You are responsible for attending all classes and laboratory meetings, and for being on time.** If you must miss a class, you are responsible for contacting your instructor to determine how to make up any work you may have missed or to determine how to obtain any important information you missed.
- 3. You are responsible for adjusting your outside responsibilities (work, family, social, etc.) in order to allow sufficient time for your education.** As a general rule, you should allow two to three hours outside of class for study purposes for each hour spent in class.
- 4. Plagiarism. Your exams, homework, research reports, and term papers must reflect your own work, unless you are explicitly directed otherwise by your instructor.** Proper methods of referencing outside sources of information should be used at all times. If you are unfamiliar with the concept of plagiarism or have questions on a specific assignment, you are responsible for asking your instructor for assistance. See also the General Catalog and Student Handbook sections on Academic Honesty.

As indicated above, you should expect to spend 2-3 hours outside of class for every hour you spend in class. Since this class meets 2-1/2 hours per week, you should expect to spend **5 to 7-1/2 hours per week outside of class on course-related work**. Your focus should be on reading and taking notes on the assigned material, rewriting and annotating lecture notes, and assuring that you understand the material *conceptually*. Simply memorizing is not enough; you must understand the concepts, relationships among diverse concepts, and practical application of the concepts.

Etiquette

Cell phones, pagers, PDAs, mp3 players and other similar devices are very disruptive to classroom work. Turn off and put away all electronic devices prior to the beginning of class. It is similarly disruptive when students arrive late to class. Arrive early enough to class so that you are prepared to work by the scheduled start of class.

NOTE: Contract Negotiations

The instructor's union is in the midst of contract negotiations and there is a possibility of a work interruption. Updates on this situation will be provided throughout the semester.

COURSE OUTLINE: NEUROPSYCHOPHARMACOLOGY

Week	Date	Topic	<u>Reading Assignments</u>
1.	Jan. 23	Introduction to the Course	
	Jan. 25	A Scientific Perspective on Psychoactive Drugs	
2.	Jan. 30	Review of Physiological Psychology: Brain Cells Assignment 1 Due	Ch. 2; CD Neuron
	Feb. 1	Review of Physiological Psychology: Potentials	Ch. 2; CD Potentials
3.	Feb. 6	Neurochem. I: General Principles	Ch. 3; CD Syn.Trans.
	Feb. 8	Neurochem. II: Acetylcholine and Monoamines Assignment 2 Due	Ch. 5-6
4.	Feb. 13	Neurochem. III: Amino Acids, etc.	Ch. 7, 10
	Feb. 15	Exam I	
5.	Feb. 20	Principles of Pharmacology I: Pharmacokinetics	Ch. 1
	Feb. 22	Principles of Pharmacology II: Pharmacodynamics	Ch. 1, 3; CD Syn.Trans.
6.	Feb. 27	Principles of Pharmacology III: Drug Targets Assignment 3 Due	Ch. 3; CD Syn.Trans.
	Mar. 1	Methods in Neuropsychopharmacology	Ch. 4; CD Res. Meth.
7.	Mar. 6	Exam II	
	Mar. 8	Concepts in Addiction	Ch. 8
8.	Mar. 13	Psychomotor Stimulants: Amphetamine and Cocaine	Ch. 11
	Mar. 15	Opiates	Ch. 10
9.	Mar. 20	Marijuana Assignment 4 Due	Ch. 13
	Mar. 22	Psychedelics	Ch. 14

10.	Mar. 27	Spring Break!!	
	Mar. 29	Spring Break!!	
	Apr. 3	Psychomotor Stimulants: Nicotine and Caffeine	Ch. 12
	Apr. 5	CNS Depressants: Alcohol	Ch. 9
11.	Apr. 10	Discussion: Drugs of Abuse and Society	
	Apr. 12	Exam III	
12.	Apr. 17	Major Depression and Antidepressants	Ch. 16
	Apr. 19	Bipolar Disorder and Mood Stabilizers	Ch. 16
13.	Apr. 24	Anxiety and Anxiolytics	Ch. 17
	Apr. 26	Schizophrenia and Antipsychotics Assignment 5 Due	Ch. 18
14.	May 1	Discussion: Psychotherapeutic Drugs	
	May 3	Exam IV	
15.	May 8	Student Presentations	
	May 10	Student Presentations	
16.	May 17	<u>9:15 – 11:15 COMPREHENSIVE FINAL EXAM</u>	

Learning Objectives

Upon completion of this course, a successful student will:

- reinforce and extend knowledge (gained from prerequisites) of synaptic transmission and its role in drug action
- understand basic pharmacological principles, including pharmacokinetics and pharmacodynamics
- be able to describe key methods used in neuropsychopharmacology
- be able to identify the major psychoactive drug classes and key examples of each
- be familiar with neurotransmitters involved in the actions of psychoactive drugs
- gain an appreciation of scientific approaches to the understanding of psychoactive drugs