

## **Neuropharmacology and Behavior (BC 3383) Course Syllabus, Fall 2008**

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Course Meeting Time: Fridays 2:10-4  
Office Hours: By appointment

### **Course Objectives**

As stated by Katzung (2000), "Pharmacology can be defined as the study of substances that interact with living systems through chemical processes, especially by binding to regulatory molecules and activating or inhibiting normal body processes." Neuropharmacology is the subdiscipline placing emphasis on drug interactions with the nervous system. The goal of this course is to introduce students to the basic principles of neuropharmacology by investigating the mechanisms through which drugs influence neural systems and induce changes in behavior. The course will focus on the molecular, biochemical and behavioral characterization of several classes of drugs including the psychostimulants, depressants, opiates, hallucinogens, marijuana and psychiatric medications.

### **Readings**

#### ***Required***

The required textbook for the course is Meyer, J.S. & Quenzer, L.F. (2005). *Psychopharmacology: Drugs, The Brain, and Behavior*. Sunderland, Massachusetts: Sinauer Associates. The text is available at Book Culture (formerly Labyrinth Bookstore).

#### ***Additional books to build your library***

Feldman, R.S., Meyer, J.S. & Quenzer, L.F. (1997). *Principles of Neuropsychopharmacology*. Sunderland, Massachusetts: Sinauer Associates.

Julien, R.M. (2005). *A Primer of Drug Action*. New York, New York: Worth Publishers.

Stahl, S.M. (2006). *Essential Psychopharmacology: Neuroscientific Basis and Practical Applications*. New York, New York: Cambridge University Press.

### **Course Requirements**

#### ***Weekly Questions***

Each week, students will be required to submit 2 questions based on the assigned readings. Question submissions will not be required until the October 3rd session. Questions should be emailed to the instructor and presenter no later than Thursday evening. The quality of the questions will be assessed in assigning credit.

#### ***Presentations***

Two or three students will serve as discussion leaders each week. Presentation format will be discussed in more detail later in the course.

### ***Examinations***

Students are required to complete two examinations, each covering approximately one half of the course. The second examination is not cumulative. It is a second exam NOT a final examination. Information from the lecture, text and presentations will be included on each exam. Question types will include both multiple choice and very short answer.

### ***Final Paper***

This course satisfies the senior seminar requirement for the Psychology Department. Students are therefore required to complete a final paper on a topic of their choice. This paper will conform to the publication guidelines of the American Psychological Association. A detailed description will be distributed in class.

### ***Class Participation***

This class will be taught in seminar format. Student participation is a key factor in nurturing an enriching learning environment. It is expected that all students will contribute to each week's discussion. You will be evaluated on the quality of your contributions. Evaluations of class participation will be based on the following:

- Has the student demonstrated knowledge of the reading assignments?
- Has the student provided new insight which builds on information in the readings?
- Is the student a good listener, addressing and integrating comments from classmates?

### ***Attendance***

One unexcused absence is allowed during the semester. Please email me before the missed class. Each additional absence will be penalized by a reduction of 1/2 letter in your final grade if you cannot provide a Dean's or medical excuse.

If you will miss more than one class due to Religious Observance, carefully consider the consequences. Unfortunately due to the nature of the course, it is impossible to offer make-up sessions and you will miss a considerable amount of information each week. This could result in a serious disadvantage on the exams. Please think seriously about taking the course this semester if you anticipate missing more than one class. In other courses, I am more than happy to offer accommodations, however due to the limited number of classes in a once/week seminar it's more challenging to "recreate" the missed sessions.

### ***Final Grades***

Your final average will be calculated as follows:

Weekly Questions	10%
Examination One	25%
Examination Two	25%
Final Paper	40%

### Extra Help

I am available for extra help during office hours and by appointment. Please do not hesitate to ask for assistance if you are experiencing difficulty with the course material. I greatly enjoy talking with students about life at Barnard and Columbia and/or future career interests. Feel free to contact me for any advice or support you may need. I am thrilled to have you in the course.

<u>CLASS MEETING DATE</u>	<u>TOPIC/READING ASSIGNMENT</u>
September 5	<b>Welcome to the Course!</b>
September 12	<b>Principles of Pharmacology</b> <i>Meyer and Quenzer, Chapter 1</i>
September 19	<b>Structure and Function of the Nervous System</b> <i>Meyer and Quenzer, Chapter 2</i>
	<b>Chemical Signaling by Neurotransmitters and Hormones</b> <i>Meyer and Quenzer, Chapter 3</i>
September 26	<b>Methods of Research in Neurobehavioral Pharmacology</b> <i>Meyer and Quenzer, Chapter 4</i> <b>Neurotransmitters</b> <i>Meyer and Quenzer, Chapter 5, 6, 7</i>
October 3	<b>Alcohol</b> <i>Meyer and Quenzer, Chapter 9</i> <b>Anxiety Disorders/Anxiolytics</b> <i>Meyer and Quenzer, Chapter 17</i>
October 10	<b>CLASS WILL NOT MEET</b>
October 17	<b>Opiates</b> <i>Meyer and Quenzer, Chapter 10</i>
October 24	<b>MIDTERM EXAMINATION</b>
October 31	<b>Psychomotor Stimulants-Cocaine, Amphetamines, Nicotine, Caffeine</b> <i>Meyer and Quenzer, Chapter 11, 12</i>
November 7	<b>Marijuana and Cannabinoids</b> <i>Meyer and Quenzer, Chapter 13</i>
November 14	<b>Hallucinogens, PCP, Ketamine</b> <i>Meyer and Quenzer, Chapter 14</i>

**CLASS MEETING DATE**

**TOPIC/READING ASSIGNMENT**

November 21

EXAMINATION TWO

November 28

Thanksgiving Holiday

December 5

Ethical Issues in Neuropharmacology

***WELCOME TO THE COURSE!!!!***