

**Course Number, Section Number, and Course Title:**  
PSYCH 4302 / BIOL 4309 Neuropharmacology

**Instructor Name:** Linda I. Perrotti, Ph.D.

**Office Number:** Life Sciences Building Room 511

**Email Address:** Perrotti@uta.edu

**Office Hours:** Monday 10:00 – 11:00 AM or by appointment

**Time and Place of Class Meetings:** MWF 11:00AM - 11:50AM LS 101

**Description of Course Content:** A survey of how drugs affect the nervous system. General topics will include cellular and molecular foundations of neuropharmacology, receptors and modulation of neural signaling. The specific role of neurotransmitter systems will be explored.

**Student Learning Outcomes:** The objective of this course is to introduce you to the chemical basis of behavior, and how various drugs influence the biological and psychological aspects of a behaving organism. This will be accomplished with a general introduction to the basics of neuropsychopharmacology and the chemical basis of the nervous system, followed by an evaluation of major drug classifications, emphasizing primarily the biological, and at times the clinical and social dimensions of their actions. By the end of the course, you should minimally have a basic understanding of:

1. Principles of pharmacology
2. Brain chemistry/chemical signaling
3. Basic understanding of methods in neuropsychopharmacology
4. Mechanisms of action for the most common drugs
5. The psychological, behavioral, and social impact of drug use and abuse

**Requirements:** Prerequisite: BIOL/PSYC 3322 Introduction to Behavioral Neuroscience or introductory course in cell biology.

**Required Textbook:** Meyer and Quenzer (2005) Psychopharmacology: Drugs, the brain, and behavior. Sinauer Associates

**Recommended Textbook:** Nestler, Hyman and Malenka (2001) Molecular Neuropharmacology. McGraw-Hill

**Specific Course Requirements:** This is an intensive course. Students are expected to know a lot of detailed information. Be sure to read textbook before attending lectures.

**Examinations:** There will be three exams. The final exam will **NOT** be comprehensive. The format for exams will be multiple choice questions. You are required to take all three exams. If you miss an exam, a grade of zero will be given. There is no provision for taking a make-up exam in this course unless documentation for a University-approved

excuse (see Catalog <http://www.uta.edu/catalog/general/academicreg>) is received within one week of the exam date. **A student arriving late after the scheduled class start time, on an exam date, will not be allowed to take the exam after the first completed exam is turned in.**

**Major Assignments:** Each student will be asked to guide the class in a discussion of a research article relevant to that day's lecture topic. Articles will be assigned in advance and ALL students are required to participate in discussion of the paper. This assignment and participation in these discussions is worth 10% of your final grade.

**Grade Calculation:** Note: UTA policy will not allow distribution of grade over the phone call or email. The three exams will contribute equally to the calculation of the final grade. The scores from each exam will be averaged and a letter grade will be assigned where A > 90%, B > 80%, C > 70%, D > 60%, F < 59%. **NOTE: There will be no extra credit work to make up the grade.**

**Attendance Policy:** No mandatory attendance, but it is *highly* recommended. If you are dropped from this class for non-payment of tuition, you may secure an Enrollment Loan through the Bursar's Office. You may not continue to attend class until your Enrollment Loan has been applied to outstanding tuition fees.

**Drop Policy:** Please refer to university drop policy. Please also refer to the academic calendar (<http://www.uta.edu/uta/acadcal/>).

**Americans With Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 - The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled *Americans with Disabilities Act (ADA)*, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability). Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

**Academic Integrity:** It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Series 50101, Section 2.2)

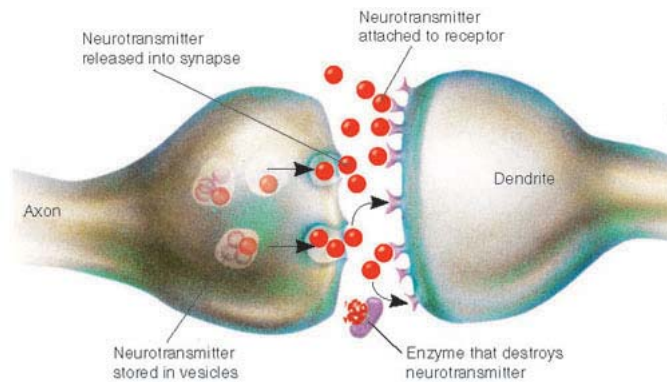
**Student Support Services Available:** The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabi. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. Classes are held as scheduled during this week and lectures and presentations may be given.

**E-Culture Policy:** The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT-Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email.

All students are assigned an email account and information about activating and using it is available at [www.uta.edu/email](http://www.uta.edu/email). New students (first semester at UTA) are able to activate their email account 24 hours after registering for courses. There is no additional charge to students for using this account, and it remains active as long as a student is enrolled at UT-Arlington. Students are responsible for checking their email regularly.

**Grade Grievance Policy:** The University Grade Grievance Policy will be followed. (See Grade Grievance Policy in the Undergraduate Catalog.)



### **Tentative Lecture/Topic Schedule:**

Chapter 1 Principles of Pharmacology

Chapter 2 Structure and Function of the Nervous System

Chapter 3 Chemical Signaling by Neurotransmitters and Hormones

*Miczek and Mutschler. 1996. Activational effects of social stress on IV cocaine self-administration in rats. Psychopharmacology 128: 256-264.*

*Pani, Porcella and Gessa. 2000. The role of stress in the pathophysiology of the dopaminergic system. Mol Psychiatry. 5:14-21.*

Chapter 4 Methods of Research in Neurobehavioral Pharmacology

*Vanderschuren and Everitt, Behavioral and neural mechanisms of compulsive drug seeking, Eur. J. Pharmacology, 526 77-88*

Chapter 5 Catecholamines

*Jentsch, Taylor, Elsworth, Redmond, Roth. 1999. Altered frontal cortical dopaminergic transmission in monkeys after subchronic phencyclidine exposure: involvement in frontostriatal cognitive deficits. Neuroscience. 90, 3. 823-832.*

*Gainetdinov, Jones and Caron. 1999. Functional hyperdopaminergia in dopamine transporter knock-out mice. Biol Psychiatry. 46:303-311*

### **Exam 1: Monday, February 18<sup>th</sup>**

Chapter 6 Acetylcholine and Serotonin

Chapter 7 Glutamate and GABA

Chapter 8 Drug Abuse, Dependence and Addiction  
Chapter 9 Alcohol  
Chapter 10 The Opiates

**Exam 2: Monday, March 31<sup>st</sup>**

Chapter 11 Psychomotor Stimulants: Cocaine and Amphetamine  
Chapter 12 Nicotine and Caffeine  
Chapter 13 Marijuana and the Cannabinoids  
Chapter 16 Affective Disorders  
Chapter 17 Anxiety Disorders  
Chapter 18 Schizophrenia

**Exam 3: Wednesday May 7<sup>th</sup>, 11 - 1:30 p.m.**