

## NEUROPHARMACOLOGY Fall 2016

<b>Instructor:</b>	Qing Lin, M.D., Ph.D.
<b>Office:</b>	Room 434, Engineering Research Building
<b>Phone:</b>	817-272-0154
<b>Mailbox:</b>	Psychology Department, UTA BOX 19528
<b>Faculty profile:</b>	<a href="http://www.uta.edu/psychology">http://www.uta.edu/psychology</a>
<b>Email:</b>	<a href="mailto:qilin@uta.edu">qilin@uta.edu</a> .
<b>Course number:</b>	BIOL/PSYC 4309-001
<b>Time and Place of Class Meeting:</b>	Tuesday and Thursday 3:30 - 4:50 PM, SH332
<b>Office Hours:</b>	Monday, 11:00AM - 12:00PM or by appointment, ERB 434

### **Course Description:**

Neuropharmacology is the scientific study of the actions of drugs and their effects on functional activity of the nervous system by binding to a particular target site or receptor. The specific focus of this course will be to provide a description of the cellular and molecular actions of drugs on synaptic transmission between neurons. This course will also discuss the pharmacological mechanisms of neurological diseases and their treatments.

### **Course Learning Objectives and Goals:**

By the end of the course, students are expected to learn **1)** how drugs produce biological and physiological changes in the functioning of neurons, which includes anatomical basis of neuro-signal pathways and biochemical basis of drug-induced signaling between neurons; **2)** how human behavior, thought and mood processes are transferred from neuron to neuron and how medications can alter the chemical foundations of these processes.

**Course Prerequisites:** Cell Biology and/or Physiology

### **Required Textbook:**

Meyer J.S. and Quenzer L.F. *Psychopharmacology: Drugs, the Brain and Behavior. Second edition.* Sunderland, MA: Sinauer Associates, 2013. ISBN: 978-0-87893-510-9. Please see **"TENTATIVE LECTURE AND TOPIC SCHEDULE"** for major assignments.

### **Attendance:**

At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance.

**Please note:** As the instructor of this course, I have established that class attendance is required by accounting for 10% of total score (please refer to “**Grade Calculation**”). Attending lecture is extremely beneficial to your performance in this advanced course. Students are responsible for signing the attendance sheet every time when coming to the class. The absence may be excused due to the events that happen unpredictably, such as illness (documentation is needed).

### **Examinations:**

There will be **three** equally weighted close book examinations, including the final exam. The final exam will NOT be comprehensive. You are required to take all *three* exams. The format for exams will be multiple-choice.

**Please note:** You are expected to be in class on time during examination dates. Exams will *not* be given to any late coming students after the first exam has been turned in. If you come after this point to take the exam, it will be considered a “missed” exam. If you miss an exam, no grade will be given.

### **Grade Calculation:**

The three exams will contribute *one third each* to 90% of the final grade. Class attendance and discussion is encouraged and will account for 10% toward the final grade. The final score will be calculated and averaged from the sum of three exams and credit of class attendance ( $30\%+30\%+30\%+10\%=100\%$ ). A letter grade will be assigned where  $A \geq 86\%$ ,  $B \geq 76\%$ ,  $C \geq 66\%$ ,  $D \geq 56\%$ ,  $F \leq 55\%$ .

**Please note:** There will be no extra credit work to make up the grade. Please do not ask. UTA policy will not allow distribution of grade over the phone call or email.

### **Make-up work:**

If you miss an exam, a grade of zero will be given. There is no provision for taking a makeup exam in this course *unless* documentation for a University-approved excuse (see <http://www.uta.edu/catalog/general/academicreg>) is received within five days of the exam date. All makeup exams will be offered in the week right before the final exam week (see **TENTATIVE LECTURE AND TOPIC SCHEDULE**). Makeup exam is **ONLY** for those students who miss the *first two* exams.

### **Drop Policy:**

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

## **Disabilities accommodations:**

UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

**The Office for Students with Disabilities, (OSD)** [www.uta.edu/disability](http://www.uta.edu/disability) or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability).

**Counseling and Psychological Services, (CAPS)** [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

**Non-Discrimination Policy:** *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit [uta.edu/eos](http://uta.edu/eos).*

## **Title IX:**

The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or [jmhood@uta.edu](mailto:jmhood@uta.edu).*

## **Academic Integrity:**

Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other*

*sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>.

**Campus Carry:** Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>.

### **Electronic Communication:**

UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Please note:** Students are responsible for checking their MavMail and Blackboard regularly, so that you will be aware of course update and announcements.

### **Student Feedback Survey:**

At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

### **Final Review Week:**

For semester-long courses, 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 syllabus*. 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. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

### **Student Support Services:**

UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include [tutoring](#), [major-based learning centers](#), developmental education, [advising and mentoring](#), personal counseling, and [federally funded programs](#). For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

**The IDEAS Center** (2<sup>nd</sup> Floor of Central Library) offers **free** tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email [IDEAS@uta.edu](mailto:IDEAS@uta.edu) or call (817) 272-6593.

The Library's 2<sup>nd</sup> floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>.

### **Emergency Exit Procedures:**

Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

## TENTATIVE LECTURE AND TOPIC SCHEDULE

Neuropharmacology (4309-001), 8/25 – 12/7/2016, TR 3:30-4:50 PM, SH332

Week	Date (Every Tuesday and Thursday)	Lecture Topics	Reading Assignments
1	Aug 25	Principles of Neuropharmacology	Chapter 1
2	Aug 30, Sept 1	Principles of Neuropharmacology Structure and Function: the Nervous System	Chapter 1 Chapter 2
3	Sept 6, 8	Structure and Function: the Nervous System Chemical Signaling by Neurotransmitters and Hormones	Chapter 2 Chapter 3
4	Sept 13, 15	Chemical Signaling by Neurotransmitters and Hormones Catecholamines	Chapter 3  Chapter 5
5	Sept 20, 22	Serotonin Acetylcholine	Chapter 6 Chapter 7
6	Sept 27  Sept 29	<b>Exam 1 (Sept 27, Tuesday, 3:30 - 4:50PM at SH332, Chapters 1-3, 5 and 6)</b> Glutamate and GABA	  Chapter 8
7	Oct 4, 6	Glutamate and GABA Drug Abuse and Addiction	Chapter 8 Chapter 9
8	Oct 11, 13	Drug Abuse and Addiction Alcohol	Chapter 9 Chapter 10
9	Oct 18, 20	Alcohol Opiates	Chapter 10 Chapter 11
10	Oct 25, 27	Opiates Psychomotor Stimulants	Chapter 11 Chapter 12
11	Nov 1, 3	<b>Exam 2 (Nov 1, Tuesday, 3:30 - 4:50PM at SH332, Chapters 7-11)</b> Psychomotor Stimulants Nicotine and Caffeine	  Chapter 12 Chapter 13
12	Nov 8, 10	Nicotine and Caffeine	Chapter 13
13	Nov 17	Marijuana and Cannabinoids	Chapter 14
14	Nov 22	Marijuana and Cannabinoids Anxiety Disorders and Anxiolytics	Chapter 14 Chapter 18
15	Nov 29, Dec 1	Affective Disorders and Antidepressants	Chapter 19
16	Dec 5-9	<b>Week of review</b> <b>Makeup exams (Dec 6, Tuesday)</b>	
17	Dec 12-16	<b>Exam 3 (chapters 12-14, 18 and 19)</b> Follow UTA final exam schedule: <a href="http://www.uta.edu/records/calendars/final-exams.php">http://www.uta.edu/records/calendars/final-exams.php</a>	