

# BIOL/PSYC4309-001: NEUROPHARMACOLOGY

Spring 2024

## Instructor Information

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**Instructor:**

Qing Lin, MD, PhD

**Office Number:**

Room 434, Engineering Research Building (ERB)

**Office Telephone Number:**

817-272-0154 (no voicemail)

**Email Address:**

[qilin@uta.edu](mailto:qilin@uta.edu)

**Faculty Profile:**

<https://www.uta.edu/academics/faculty/profile?username=qilin>

**Office Hours:**

An office hour is available every Thursday between 10 -11 AM in the ERB room 434. You are welcome to bring questions and interact with me for Q&A regarding the course learning. If anyone requests a virtual meeting in “Microsoft Teams” or a meeting time rather than office hour, please make an appointment.

## Course Information

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**Time and Place of Class Meetings:**

This is an on-campus (“face-to-face”) class (For a full definition of the course modalities, please go to [www.uta.edu/academics/courses-and-schedules](http://www.uta.edu/academics/courses-and-schedules)). All lectures and exams are held at **3:30 – 4:50 PM** in the **SH330** every Tuesday and Thursday. Please refer to “UTA final exam schedules” for exam 3.

**Description of Course Content:**

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.

**Student Learning Outcomes:**

By the end of the course, students are expected: **1).** to describe 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).** to understand how human behavior, thought and mood processes are transferred from neuron to neuron and how medications can alter the chemical foundations of these processes.

**Required Textbook and Other Course Materials**

**A. Textbook:** Meyer J.S. and Quenzer L.F. *Psychopharmacology: Drugs, the Brain and Behavior*. The 3<sup>rd</sup> edition. Sinauer, Oxford University Press, 2019. ISBN: 978-1-60535-555-9. You may look up the costs of the textbook at UTA Bookstore

<https://www.bkstr.com/texasatarlingtonstore/home>. Cost varies depending on the options, e.g., rent or buy and hardcopy or digital.

**Please note** you are responsible for taking your own risk to make a decision on purchasing older editions, since the answer keys to the multiple questions are based on the 3<sup>rd</sup> edition. It is highly recommended that you have the 3<sup>rd</sup> edition of the textbook because you will need to read and study from it to get much detailed information in order to pass the course.

**B.** The sets of PowerPoint slides provide the course outlines that help students to understand materials of the textbook while interacting with the instructor in class and guide students to review for exams. The slides are uploaded at “Modules” in the Canvas available for students to download.

### **Descriptions of major assignments and examinations:**

There will be no assignments but reading the PowerPoint slides, textbook and reviewing Study Questions are highly recommended.

**Three** equally weighted closed-book exams:

- a. Exam 1 covers chapters 1, 3, 5, 6 and 7 (**note:** chapters 2 and 4 will not be tested).
- b. Exam 2 covers chapters 8, 9, 10, 11 and 12.
- c. Exam 3 covers chapters 13, 14, 17, 18 and 20. The exam 3 is NOT comprehensive.

You are required to take all **three** exams. The format for exams will be multiple-choice. The form number of scantron answer sheet is 4521.

### **Technology Requirements:**

Since all information and course materials are provided via the Canvas, it is strongly suggested that students access the Canvas Help and/or tutorials to familiarize and download these tools prior to the class.

### **Other Requirements:**

The course prerequisites of this class are BIOL/PSYC3322, Cell Biology and/or Physiology.

## **Grading Information**

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### **Grading policies:**

Each exam is worth **100** points with a total of **300** points for three exams.

Additional **60** points as bonus are added, which include:

a. **10** points are additional for bonus questions added to each exam (10 x 3 exams = **30** points).

b. **30** points are additional added to encourage students to attend the lectures. There will be **25** lectures; each lecture attendance is worth **1.2** point.

The final percent grade will be determined by dividing the total number of earned points (including earned additional bonus points) by the total **300** points.

For examples, if you earn 250 points, your final percent score will be  $250/300 \times 100 = 83.3\%$ ; if you earn 325 points, your final percent score will be  $325/300 \times 100 = 108.3\%$ . This is the way to calculate the final percent score yourself. This is also the way to keep track of your performance.

A final letter grade will be assigned where  $A \geq 86\%$ ,  $B \geq 76\%$ ,  $C \geq 66\%$ ,  $D \geq 56\%$ ,  $F \leq 55\%$ .

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

### **Make-up Exams:**

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 is received. (<https://catalog.uta.edu/academicregulations/studentresponsibility/#attendancetext>).

Please read the details about taking makeup tests as below:

**A.** Makeup tests can be approved and offered for students who are absence of exams usually due to **1).** Unpredictable or emergent events, like illness of the student or the people in the student's family; **2).** Calls for jury duty; **3).** UTA-sponsored activities. The request for a makeup test must be submitted along with valid documentation within five business days of the exam date. A makeup test cannot be approved without valid documentation. Delayed submission is not accepted unless a justification email for the delayed submission is sent to the instructor within five business days of the exam date.

**B.** Please note that the absence of exams cannot be excused due to participating in party, wedding, festival, taking vacation and taking school interview or job interview.

**C.** All makeup tests will be offered during the "dead week", i.e., the week before the Final Exam Week unless a special approval by the instructor.

**D.** Make-up test is **ONLY** for those students who miss the first two tests for the above valid reasons.

**E.** The instructor will schedule the dates/times for taking makeup tests and then informs the students involved.

### **Expectations for Out-of-Class Study:**

Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including intensively reviews of chapters guided by "Study Questions" and PowerPoint slides, reading the textbook, and preparing for exams, etc.

### **Grade Grievances:**

Any appeal of a grade in this course should submit a grievance form by following the procedures and deadlines as published in the current University Catalog (<https://www.uta.edu/academics/schools-colleges/science/departments/psychology/degree-programs/graduate/graduate-resources/student-grievance-form>).

### **Lectures and Exams**

This is an advanced course that covers almost all aspects of neuropharmacology. Students are required to know much detailed information. To this end, please be sure to read the textbook and lecture slides before and after attending lectures. Critically, students are strongly suggested to do an intensive review by focusing on those "**Study Questions**" indicated on the last page of PowerPoint slides and the textbook for each chapter.

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.

#### **Schedules of Tentative lecture topics and exams**

<b>Week</b>	<b>Date (Every Tue &amp; Thu)</b>	<b>Lecture Topics</b>	<b>Reading Assignments</b>
1	1/16, 18	Principles of pharmacology	Chapter 1
2	1/23, 25	Structure and Function of the nervous system Chemical Signaling by Neurotransmitters and Hormones	Chapter 2 Chapter 3
3	1/30, 2/1	Chemical Signaling by Neurotransmitters and Hormones Catecholamines Serotonin	Chapter 3  Chapter 5 Chapter 6
4	2/6  2/8	Serotonin Acetylcholine Glutamate and GABA	Chapter 6 Chapter 7 Chapter 8

5	2/13 2/15	<b>Exam 1: 2/13</b> , Tue, 3:30 - 4:50 PM (80 min) at SH330, covers chapters 1, 3, 5, 6, and 7. Glutamate and GABA Drug Abuse and Addiction	Chapter 8 Chapter 9
6	2/20, 22	Drug Abuse and Addiction Alcohol	Chapter 9 Chapter 10
7	2/27, 29	Alcohol Opiates	Chapter 10 Chapter 11
8	3/5, 7	Opiates Psychomotor Stimulants	Chapter 11 Chapter 12
9	3/11 - 15	<b>Spring break</b>	No lectures
10	3/19, 21	Psychomotor Stimulants Nicotine and Caffeine	Chapter 12 Chapter 13
11	3/26 3/28	<b>Exam 2: 3/26</b> , Tue, 3:30 - 4:50 PM (80 min) at SH330, covers chapters 8, 9, 10, 11, and 12. Nicotine and Caffeine Marijuana and cannabinoids	Chapter 13 Chapter 14
12	4/2, 4	Marijuana and cannabinoids Anxiety Disorders and Anxiolytics	Chapter 14 Chapter 17
13	4/9, 11	Anxiety Disorders and Anxiolytics Affective Disorders and Antidepressants	Chapter 17 Chapter 18
14	4/16, 18	Affective Disorders and Antidepressants Neurodegenerative Diseases	Chapter 18 Chapter 20
15	4/23, 25	Neurodegenerative Diseases Backup	Chapter 20
	4/26 - 5/1	Review <b>Makeup exams on Apr 30 (Tue)</b>	No lectures
	5/2-8 Final exam week	<b>Exam 3: May 2</b> , Thu, <b>2 - 4:30 PM</b> (2.5 h) at SH330, covers chapters 13,14,17,18 and 20. Please also get <b>update</b> for dates of exams from <a href="https://www.uta.edu/administration/registrar/calendars/final-exams">https://www.uta.edu/administration/registrar/calendars/final-exams</a>	Exam 3

## Institution Information

UTA students are encouraged to review the below institutional policies and informational sections and reach out to the specific office with any questions. To view this institutional information, please visit the [Institutional Information](https://resources.uta.edu/provost/course-related-info/institutional-policies.php) page (<https://resources.uta.edu/provost/course-related-info/institutional-policies.php>) which includes the following policies among others:

- Drop Policy
- Disability Accommodations
- Title IX Policy
- Academic Integrity
- Student Feedback Survey
- Final Exam Schedule

## **Additional Information**

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### **Face Covering Policy:**

Face coverings are not mandatory. All students and instructional staff are welcome to wear face coverings while they are on campus or in the classroom.

### **Attendance:**

At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator of student success. 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. As the instructor of this course, I have established the attendance policy (see "**Please note**" below). However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty must report the last date a student attended their class based on evidence of academic engagement such as a test, participation in a class project or presentation, or an engagement online via Canvas. This date is reported to the Department of Education for federal financial aid recipients.

Distance education courses require regular and substantive online interaction and participation. Students must participate in online course activities to demonstrate attendance; logging into an online class is not sufficient by itself to demonstrate attendance.

**Please note:** Additional bonus points are added to encourage lecture attendance because lecture attendance is needed for success in this course (see **Grading Information** above). Due to much information included in the course, routinely attending the lecture will be extremely beneficial to students in grabbing and understanding the materials to improve the performance of course learning. If students miss a class meeting(s) or miss portions of classes due to tardiness or early departure, they are still accountable for the materials that are covered by those classes. If you miss a class, you are responsible for finding your classmates with whom you can share resources.

### **Emergency Exit Procedures:**

Should we experience an emergency event that requires evacuation of the building, students should exit the room and move toward the nearest exit (there are three entrance doors in the LS building available for evacuation). Evacuation plans may be found at [Evacuation Route Maps \(Buildings\)](#). When exiting the building during an emergency, do not take an elevator but use the stairwells instead. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

### **Academic Success Center:**

The Academic Success Center (ASC) includes a variety of resources and services to help you maximize your learning and succeed as a student at the University of Texas at Arlington. ASC services include supplemental instruction, peer-led team learning, tutoring, mentoring and TRIO SSS. Academic Success Center services are provided at no additional cost to UTA students. For additional information visit: [Academic Success Center](#). To request disability accommodations for tutoring, please complete this [form](#).

**The IDEAS Center** (<https://www.uta.edu/ideas/>) (2<sup>nd</sup> Floor of Central Library) offers **FREE tutoring and mentoring** to all students with a focus on transfer students, sophomores, veterans

and others undergoing a transition to UT Arlington. Students can drop in or check the schedule of available peer tutors at [www.uta.edu/IDEAS](http://www.uta.edu/IDEAS), or call (817) 272-6593.

### **The English Writing Center (411LIBR):**

The Writing Center offers **FREE** tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at the [Writing Center](https://uta.mywconline.com) (<https://uta.mywconline.com>). Classroom visits, workshops, and specialized services for graduate students and faculty are also available. Please see [Writing Center: OWL](#) for detailed information on all our programs and services.

The Library's 2<sup>nd</sup> floor [Academic Plaza](http://library.uta.edu/academic-plaza) (<http://library.uta.edu/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.

### **Librarian to Contact:**

Each academic unit has access to [Librarians by Academic Subject](#) that can assist students with research projects, tutorials on plagiarism and citation references as well as support with databases and course reserves.

### **Emergency Phone Numbers**

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In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381

### **Library Information**

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#### **Research or General Library Help:**

Ask for Help

- [Academic Plaza Consultation Services](http://library.uta.edu/academic-plaza) ([library.uta.edu/academic-plaza](http://library.uta.edu/academic-plaza))
- [Ask Us](http://ask.uta.edu/) ([ask.uta.edu/](http://ask.uta.edu/))
- [Research Coaches](http://libguides.uta.edu/researchcoach) (<http://libguides.uta.edu/researchcoach>)

Resources

- [Library Tutorials](http://library.uta.edu/how-to) ([library.uta.edu/how-to](http://library.uta.edu/how-to))
- [Subject and Course Research Guides](http://libguides.uta.edu) ([libguides.uta.edu](http://libguides.uta.edu))
- [Librarians by Subject](http://library.uta.edu/subject-librarians) ([library.uta.edu/subject-librarians](http://library.uta.edu/subject-librarians))
- [A to Z List of Library Databases](http://libguides.uta.edu/az.php) ([libguides.uta.edu/az.php](http://libguides.uta.edu/az.php))
- [Course Reserves](https://uta.summon.serialssolutions.com/#!/course_reserves) ([https://uta.summon.serialssolutions.com/#!/course\\_reserves](https://uta.summon.serialssolutions.com/#!/course_reserves))
- [Study Room Reservations](http://openroom.uta.edu/) ([openroom.uta.edu/](http://openroom.uta.edu/))