Neuropharmacology
Fall 2016

Course Number/Section: **NSC 4363-001**
Course Title: Neuropharmacology
Classroom: GR 4.428
***Term: Fall* 2016**
Dates: Aug 23th – Dec 7th
Days & Times: **Tuesday & Thursday 8:30- 9:45 am**

Professor Contact Information:
***Professor*:** Greg Dussor, PhD
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Office Location: BSB 14.502
Office Phone: 972-883-2385
Office Hours: One hour after each Tuesday lecture, or email for appointment.

Teaching Assistants:
Chris de Solis (Graduate) cad130330@utdallas.edu
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Teaching Assistant Office Hours: email for appointment
Review sessions: to be determined.

Final Exam: 12/15/2016 8:00-10:45 am

Course Pre-requisites
Prerequisites: NSC 4352 or NSC 4354

Course Description
The primary goal of this course is to provide an overview of the field of neuropharmacology. Topics that will be covered include principles of synaptic neurotransmission as well as the anatomy/physiology of specific neurotransmitter systems. These neurotransmitter systems will include major transmitters such as dopamine, serotonin etc. as well as atypical transmitters such as endovanilloids, nucleotides, and nitric oxide. Also covered in this course is the basic pathology of disease states that are related to specific neurotransmitter systems such as Parkinson's and Alzheimer's disease. Finally, the course will cover pharmacological agents that manipulate these neurotransmitter systems either for the treatment of disease or for their abuse potential.

Student Learning Objectives/Outcomes
After completing the course, students should be able to:

1.1 Understand the basic principles of pharmacology including ligand-receptor interactions, affinity, efficacy, potency, concentration-response curves, binding assays.
1.2 Describe the mechanisms by which neurons send electrical signals, activate intracellular pathways, and communicate with other neurons

1.3 List the main types and families of ion channels, g-protein coupled receptors, kinases, and nuclear receptors.
1.4 Explain the major neurotransmitter systems, their basic anatomy/physiology, and how these systems are modulated by pharmacological agents.
1.5 Understand how pharmacological agents can be used to correct pathological functions of the nervous system.
1.6 Explain basic experimental methods used to identify pharmacological targets.
1.7 Identify areas of neuropharmacology where drugs are lacking or are ineffective.

Required Textbooks and Materials

1) Eric Nestler, Steven Hyman, and Robert Malenka. Molecular Neuropharmacology: A Foundation for Clinical Neuroscience. Third Edition. McGraw Hill. The second edition is also acceptable.

2) Lecture PPT files will be posted on eLearning before each lecture. There is no guaranteed posting date or time but files will be posted at least 1 hour before lecture. Slides are for your own use to aid your learning in this course. Reposting of these slides online or reuse of these slides for other purposes is prohibited.

Course Policies & Requirements

The concepts covered in this course can be technically challenging. Reading the textbook prior to lecture is highly recommended to understand the concepts and to complete the course successfully.

Photography and videography is prohibited. Audio recording is allowed (but prior permission is required).

Grade Changes:

Following exams you will have one week, after which no changes will be made to any grade. There is no opportunity for extra credit in this course.

Exams:

There will be 3 comprehensive exams and a final. These exams cannot be dropped. Exams will be multiple choice. Excused absences for exams require both appropriate documentation and **advance notice** (by email, phone, or in person).

Paper review:

In addition to the exams, 10% of your grade will come from review of a research article that you select. Your article must be approved by either the professor or the graduate TA and *any given research article may only be reviewed by 1 student in the class*. This article must have some relationship to neuropharmacology and it must be an original research article (i.e. it cannot be a review article). Your review should be approximately 1 typed page, 1.5 line spacing, 0.5 inch margins, and 11 point font. Include the full citation of the article at the beginning of your review (Article title, Journal name, year, volume, issue, pages). In your review, cover the following:

1) What is the article about, what question does it address, and what does it show that is novel?
2) What methods did the authors use to generate their data and findings?
3) Do you agree with the authors' conclusions and what questions are unresolved after their study?
4) Why did you choose this article and what does it have to do with neuropharmacology?
5) Do you think this article has any impact on understanding or treatment of human disease and why/how?

Attendance: All students are expected to attend each class. Only official UT Dallas events or documented medical emergencies will be excused.

Grading Policy and Final Grade Scale
(NOTE: There is NO extra credit possible in this class)

Exam 1:	(22.5% of your grade)
Exam 2:	(22.5% of your grade)
Exam 3:	(22.5% of your grade)
Final: Dec 15 @ 8:00am	(22.5% of your grade)
Paper review:	(10% of your grade)

10% of your grade will be based on review of a research article, which can be turned in at any time throughout the semester. Details of this review are found above.

GRADING SCALE:

Percent Grade Point Range Totals
90.0-100% A
78.0-89.99% B
65.0-77.99% C
55.0-64.99% D
54.99% and less F

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UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.