

Drugs and the Brain

Syllabus for PSYC/NSCI 414 Fall, 2019

Tuesdays & Thursdays 2:00-3:15
117 Gore Hall

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Office Hours: Mondays 11:00-12; Thursdays 12:00-1:00, other times by appointment - schedule via e-mail

Course Description

The course is divided into two parts.

- How do psychoactive drugs work? We will learn the behavioral, physiological, and molecular actions of therapeutic, abused and addictive drugs.
- How do drugs affect our society? Although many drugs are beneficial, drugs also create many problems in our society. How should we address these problems?

Course Goals

- Acquiring knowledge of theory and research on how drugs work in the brain and affect behavior and society. This will be accomplished by a combination of interactive lectures, problem-based learning and student presentations.
- Developing an understanding of research design, data analysis, and interpretation of empirical findings in psychopharmacology. This will be accomplished by problems and discussions of research methods and design in psychoactive drug research.
- Acquiring the ability to evaluate the adequacy of claims about the efficacy of psychoactive drugs and their side effects.
- Promoting the development of communication skills by having groups of students prepare and lead open-class discussions of controversial issues about drugs in our society. Topics include the pros and cons of the war on drugs, prescribing drugs to children for mental and behavioral problems, legalization of marijuana and other drugs, etc.

Textbooks: Psychopharmacology: Drugs, the brain and behavior, 3rd Edition, by Jerrold S. Meyer and Linda F. Quenzer. **Taking Sides: Clashing Views on Drugs and Society**, 12th Edition, by Dennis Miller.

iClickers: i>clickers will be used for quizzes in this class. Bring your clicker to class every day to obtain full credit. For more info about clickers, visit: <http://ats.udel.edu/clickers/faq.php>. In keeping with [UD's Code of Conduct](#) related to cheating, attempts to use more than one clicker per class period are subject to academic dishonesty ramifications.

Register your clicker using the link available in our Sakai course. One registration provides information to all your instructors in classes using i>clickers and Sakai. It's best to unregister, "Disable," any clickers you no longer bring to class. e.g. lost, broken, or sold clickers.

Class structure

There are two types of classes. The first type is the Lecture/Discussion class centered on Chapters in **Meyer and Quenzer's Psychopharmacology**. Each class will begin with a multiple-choice quiz and then continue in the lecture/discussion format. There will also be some problem-based learning exercises. The second of type class has a student-led open discussion format. See the [class schedule](#) below for the topics of each class.

Quizzes

The multiple-choice quizzes (5 questions per quiz) will cover the material in the chapter(s) in Meyer and Quenzer assigned for that class period (see [class schedule](#)).

Lecture/Discussion

The lecture/discussion part of the class will be to facilitate learning of the material in Meyer and Quenzer and go beyond the material. This will be done by reinforcing material in the textbook, introducing new material, and most importantly, having students direct what material they want to dig into more deeply. You should come to class with questions and ideas on subjects pertaining to the day's chapter that you would like to discuss for more clarification or to expand further.

Problems

Some classes will have short problems to be solved either individually or cooperatively in a team. These are to help understanding of particular ideas. The problems are not scored or graded, but used for learning specific points.

Student-led Discussions of Societal Issues

Three to five students will work together to lead discussions about societal issues of drugs. All students will choose assignments at the beginning of the semester (see [Student-Led Discussions](#)). The leaders will present a synopsis of the problem and the pro and con arguments on the topic. The topics correspond to articles in **Miller's Taking sides** book. While the book provides a general framework for discussions, discussion leaders should not merely give a summary of the articles, but should find other material and information about the subject. There is a tremendous amount of information on the internet on all of the subjects. Powerpoint presentations of the synopsis of the issue, the pro and con arguments and questions for discussion are encouraged. **Keep the synopses and arguments relatively short (about 20-25 minutes total for all) so we have sufficient time for discussion. It is important that the discussion leaders prepare a number of questions (10 is a good number) that will generate an open discussion for 30 minutes or more.** The discussion is not a debate, but a roundtable discussion with participation by all of the students.

Resources in addition to the assigned texts

There are many resources for information on mechanisms of action, effects, side effects and societal issues about drugs (licit and illicit).

Some other interesting internet resources are:

[The University of Delaware Library](#)

[Neurosciences on the Internet](#)

[Electronic Journals](#)

[Psychology: Internet Resources](#)

[Biological Sciences: Internet Resources](#)

[National Institute of Mental Health Home Page](#)

[National Institute on Drug Abuse](#)

[National Institute of Neurological Disorders Home Page](#)

[RxList - The Internet Drug Index](#)

[Virtual Drugstore - Your Reference Guide to the Latest in Pharmaceuticals](#)

[The Vaults of Erowid](#)

[HerbMed - evidence-based herbal database](#)

Attendance

Students will be allowed two absences. If a student is absent during a class with a quiz, the untaken quiz will count towards one of the two dropped quizzes (see Grading below). Each absence beyond the two allowed will result in a 1% reduction in the student's numerical grade. Excused absences

beyond two occasions are considered to be extreme cases, may require documentation, and will be treated on a case-by-case basis.

Academic Honesty

All students must be honest and forthright in their academic studies. To falsify the results of one's research, to steal the words or ideas of another, to cheat on an assignment, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance. Any violation of this standard must be reported to the Office of Student Conduct. See <http://www.udel.edu/stuguide/18-19/code.html> for the University policy on Student Code of Conduct.

Grading

There will be quizzes on each chapter of Meyer and Quenzer and two exams. The 2 lowest quiz scores of each student will be dropped (not included in calculating the final grade). The first exam (mid-term) covers material from the beginning of the course until the exam, while the second (final) exam covers material from the mid-term exam on.

Quizzes account for 40% of the grade. Each exam counts for 25% of the final grade. Leading and participating in discussions contribute 10%. During each of these discussions, each student is expected to ask questions, comment and give opinions.

Grading Scale

A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	< 60

Class Schedule

DATE	Chapters in Meyer & Quenzer	Topic	Issue in Miller	Topic
Aug 27		Introduction	-	-
Aug 29	2 (no quiz)	Structure & Function	-	-
Sept 3	4	Methods		
Sept 5	1 (pp. 1-25)	Pharmacology Principles - Pharmacokinetics	-	-
Sept 10	1 (pp. 25-38)	Pharmacology Principles - Pharmacodynamics	-	-

Sept 12	3	Neurotransmitters & Hormones	-	-
Sept 17	-	-	1.1 & 1.2	Drug laws
Sept 19	5	Catecholamines	-	-
Sept 24	-	-	1.3, 1.7 & 2.1	Prescription of drugs
Sept 26	6	Serotonin	-	-
Oct 1	7	Acetylcholine	-	-
Oct 3	8	Glutamate & GABA	-	-
Oct 8	-	-	2.4, M&Q pages 500-515	Hallucinogens as therapy
Oct 10	-	Midterm Exam	Midterm Exam	Midterm Exam
Oct 15	9	Drug Abuse and Addiction	-	-
Oct 17	-	-	2.2, 3.1, 3.2	Addiction: biology or psychology?
Oct 22	No Class (Conference)	No Class (Conference)	No Class (Conference)	No Class (Conference)
Oct 24	10	Alcohol	-	-
Oct 29	-	-	1.4, 1.5, 3.5	Regulation of alcohol
Oct 31	11	Opioids	-	-
Nov 5	12	Cocaine and Amphetamine	-	-
Nov 7	-	-	3.3, 3.4	Addiction: drugs, internet & social media
Nov 12	13	Nicotine & Caffeine	-	-
Nov 14	14	Marijuana and Cannabinoids	-	-
Nov 19	-	-	1.6, 2.3	Smoking, vaping & marijuana laws
Nov 21	18	Affective Disorders	-	-
Nov 26	Thanksgiving Break	Thanksgiving Break	Thanksgiving Break	Thanksgiving Break
Nov 28	Thanksgiving Break	Thanksgiving Break	Thanksgiving Break	Thanksgiving Break

Dec 3	19	Schizophrenia	-	-
Dec 5	-	-	1.8, 3.6	Drug prevention and treatment
TBA	Final Exam	Final Exam	Final Exam	Final Exam

Student-Led Discussions

Date	Issue in Miller	Topic	
Sept 17	1.1, 1.2	Drug laws	1.
Sept 24	1.3, 1.7, 2.1	Prescription of drugs	1.
Oct 8	2.4, M&Q pages 500-515	Hallucinogens as therapy	1.
Oct 17	2.2, 3.1, 3.2	Addiction: biology or psychology?	1.
Oct 29	1.4, 1.5, 3.5	Regulation of alcohol	1.
Nov 7	3.3, 3.4	Addiction: drugs, internet & social media	1.
Nov 19	1.6, 2.3	Smoking, vaping & marijuana laws	1.
Dec 5	1.8, 3.6	Drug prevention and treatment	1.

Last Updated on 08/07/2019

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