Psychology 517: Psychopharmacology

Fall 2012

Instructor: Martin Acerbo, Ph.D.
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Office hours: Monday and Wednesday 3:30 to 5:00 and Friday 10:00 to 12:00
Class meets: Wednesdays 9:00 to 11:50 am; LAGOMAR W 0289

Required texts:

Overview of the course: This course is a graduate level examination of clinical psychopharmacology. The purpose is to enhance the understanding of psychopharmacology and its effects on psychopathology and human functioning. Students will learn about the various classes of psychotropic substances, the mechanism of induction and side effects, the neurobiological bases of most common mental illness along with the pharmacological treatment for such disorders and the biological bases of substance abuse of illegal and prescribed drugs. The course format will combine lectures, discussions and student presentations.

Learning objectives:
At the end of the course, students will demonstrate familiarity with specialized psychopharmacology substances as operationalized in the following objectives:

a. Understand basic pharmacokinetics of psychotropic drugs.
b. Understand basic neurophysiology, neuroanatomy and neurochemistry.
c. Be able to identify major classification of psychotropic drugs, mechanism of action, and therapeutic and adverse effects.
d. Be able to identify the basic classes of medications, such as antidepressants, mood stabilizers, anxiolytics, and antipsychotics.

e. Be able to identify possible side effects and interaction effects of the various medications.

f. Understand ethical/legal issues with regards to psychopharmacology.

**Blackboard:** This course will use Blackboard. You have already been registered and may login using your ISU NetID and password. Here, you will be able to keep track of your grades, assignments, and access supplemental materials.

**Documented disabilities:** If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me at the beginning of the semester. You should also request that a Disability Resources staff send a SAAR form verifying your disability and specifying the accommodations you will need.

**Evaluation:**

**Exams:** There will be three (3) non-cumulative exams in this course. Each exam is worth 100 points and will consist of multiple-choice, short-answer, and essay questions. Arrangements for a make-up exam due to anticipated absences (e.g., ISU athletic event, class field trip) must be made before the scheduled exam time. The only exclusions to this rule are documented cases of emergency or very unusual circumstances, with instructor notification occurring within 24 hours of the scheduled exam time. Make-up exams will be held on Fridays from 3 pm to 5 pm.

**Class presentation/Lead discussion:** There will be student presentations about one of the topics assigned in the lecture schedule below. This presentation is worth 50 points and should last for about 20 min. For this presentation students may (but do not have to) use information from textbooks assigned for the class, but must also include information from at least one additional empirical journal article about the medication/topic on which she/he is presenting. This article must be handed out to your fellow students (and instructor) one week in advance of the scheduled presentation, in order to provide enough time for everyone to read this article. Exam questions may cover information from any of these student-led presentations and articles in addition to presentations by the instructor and readings from the assigned textbooks.

**Term Paper:** There will be a paper written in APA format consisting of 6 to 10 pages and worth 50 points. The topic is of your choice and may only partially overlap with the topic of your class presentation. The paper must include a minimum of eight references (all references must be within the
last 5 years). It must also include the following information (you may include additional information not listed here if you would like, however):

a. **Historical background of the substance/medication**: Introduce the selected substance/medication and give a brief historical perspective.

b. **Mechanism of action**: Discuss the pharmacodynamics of the substance/medication.

c. **Pharmacokinetics**: Discuss the absorption, distribution, metabolism and elimination of the substance/medication. You may discuss issues like the blood brain barrier, placental barrier, physiological and psychological effects, side effects, drug interaction effects, etc.

d. **Substance use/Pharmacotherapy**: Indications and contraindication for this medication. Discuss why and for whom this medication is prescribed and the clinical efficacy for treatment. In case of a substance of abuse, discuss the main psychological effects and the social connotations that the drug use may have such as discussion of the drug use in television discussion/news shows, and newspapers.

**Extra Credit**: Students will have the opportunity to earn up to 25 points of extra credit during the course of the semester. In-class extraordinary participation will earn student points. There will be also in-class quizzes, each worth 3 to 5 pts. The exact date of the quizzes will not be divulged. Each quiz will be multiple choices, and will assess your knowledge of the material covered since the last exam. For example, a quiz given between Exam I and Exam II will cover only Exam II material presented up to that point. **Quizzes cannot be made up.**

**Grading scale**

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<td>Exam 1</td>
<td>100</td>
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<td>Exam 2</td>
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**Extra Credits**

| Quizzes and participation | 25 |
**Academic Dishonesty Policy:** Students are expected to adhere to Iowa State University’s Student Conduct Code and Regent’s Rules of Personal Conduct at all times (http://policy.iastate.edu/). Incidents of academic dishonesty (plagiarism, cheating, etc.) will be dealt with as outlined in the ISU Bulletin. Students found guilty of academic dishonesty are subject to academic penalties determined by the instructor, as well as penalties under the university student conduct regulations. Violations will be reported to the dean.

**Contact Policy:** All emails regarding exam questions need to be sent to me at least 40 hours before the exam. However, I recommend that you come to our office hours for most inquiries.

**Course Schedule**

Class will meet once a week. Each week there will be a combination of lectures, student presentation, discussion and quizzes.

Student presentations will be arranged during the first class meeting.

08/22 First week: **Introduction, Pharmacokinetics and pharmacodynamics** – Chapter 1 from Meyer & Quenzer

08/29 Second week: **CNS structure and function** – Chapter 2 from Meyer & Quenzer

09/05 Third week: **Chemical signaling – Neurotransmitters** – Chapters 3 and 5 from Meyer & Quenzer

09/12 Fourth week: **Neurotransmitters** – Chapters 5, 6 and 7 from Meyer & Quenzer

09/19 Fifth week: **Theories of drug of abuse** – Chapter 8 from Meyer & Quenzer plus Chapters 1 and 10 from Koob & Le Moal

09/26 Sixth week: **First midterm** (material from week 1 to 5 inclusive)

10/03 Seventh week: **Alcohol** – Chapter 9 from Meyer & Quenzer plus Chapter 5 from Koob & Le Moal

10/10 Eight week: **Opiates pain and addiction** – Chapter 10 from Meyer & Quenzer plus Chapter 4 from Koob & Le Moal

10/17 Ninth week: **Psychostimulants** – Chapter 11 from Meyer & Quenzer plus Chapter 3 from Koob & Le Moal

10/24 Tenth week: **Cannabinoids** – Chapter 13 from Meyer & Quenzer plus Chapter 7 from Kobb & Le Moal

10/31 Eleventh week: **Second Midterm** (material from week 7 to 10 inclusive)
11/07 Twelfth week: **Hallucinogens** – Chapter 14 from Meyer & Quenzer

11/14 Thirteenth week: **Mood stabilizers** – Chapter 16 from Meyer & Quenzer

11/21  THANKS GIVING – no class

11/28 Fourteenth week: **Anxiolytics** – Chapter 17 from Meyer & Quenzer

12/5 Fifteenth week: **Neuroleptics** – Chapter 18 from Meyer & Quenzer

Final week: **Final exam** (material from week 12 to 15 inclusive)