Psychopharmacology
Sayamwong “Jom” Hammack
The University of Vermont

Instructor’s Contact Information:
Office: 336 Dewey Hall
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Office Hours: Tuesday 8:30-9:30 am,
Thursday 2:30-3:30 pm, or by
appointment

Course Information:
PSYC 223
Spring, 2015
Tues/Thurs 1:00 -2:15 pm
Waterman 458

Dr. Kim Lezak is teaching section A of
this course, and is also available during
her office hours to answer questions.
Lezak office hours: Monday 12:00-
1:30pm, Wednesday 10:30-noon in
Dewey 247

Please note: This syllabus is subject to change at the discretion of the instructor. I plan to
keep these changes, if any, to a minimum; but occasionally adjustments are required.

Course Description

Psychoactive drugs are substances that alter mood, consciousness, and/or behavior, which
they accomplish by modifying existing pathways in the brain. Most commonly, psychoactive
drugs alter the processes involved in the synaptic transmission of neurotransmitters. In this
course we will examine the major neurotransmitters systems of mammalian brains, discussing the
pharmacology of each system, and the role of each in normal and abnormal behavior.

This course might seem difficult because the field of psychopharmacology is based on
fundamental principles spanning many sciences, including chemistry, biology, and biochemistry.
I will do my best to try and make this class assessable to everyone; however, please ask questions
and/or see me if you feel lost. Feedback is very important to me.

After taking this course, we expect that you will be able to read about research in the field
of psychopharmacology and be able to critically evaluate the work. Because this is an upper level
course, we expect that the depth of your understanding will prepare you for graduate study in
fields related to psychopharmacology. Within this framework, we have several major objectives:

1. Factual knowledge and scientific vocabulary. We will test your knowledge of scientific
vocabulary and basic processes related to psychopharmacology on exams.

2. Conceptual understanding. Some exam questions will be designed to assess your
conceptual understanding of topics related to psychopharmacology. For example, you may
asked to compare similarities and differences between different neurotransmitter systems, or
processes within those systems.

3. Solving problems. We will also require you to use the information that you have learned
in a new or different way to show that you can solve problems. For example, we may give
you a hypothetical scientific problem on an exam, and ask you to determine the best way to
address the problem given the tools we have discussed in class.
4. Scientific Writing. We will work on improving your skills in scientific writing, by assessing the quality of your writing and improvement on a literature review paper that you will write over the course of the semester. You will receive feedback on a rough draft of this paper, and have the opportunity to incorporate this feedback on your final draft.

Please email me with questions, comments, and concerns; however, in emails please hold yourself to the same standards that you would using other forms of communication. I check my email and voicemail daily (unless I tell you otherwise) and will try to reply within a day or two. If I don’t respond within 2 days, you may send me a “gentle reminder” to do so.

I expect that each of us will adhere to the UVM classroom code of conduct as well as UVM standards of academic integrity. Please silence all cell-phones and other electronic devices. Please do not use devices in class that may be disruptive to others.

Lecture attendance is critical for success in this course. The material is cumulative. Failing to attend lectures will prevent you from participating in the discussion of this material and will lead you to fall behind.

Required Text:

The assigned text is one of the better psychopharmacology texts available, and will be a valuable resource to anyone continuing in the field. Please don’t be intimidated by it. If there is something you don’t understand, I will be happy to go over it with you. I will also be handing out research articles over the course of the semester. Specific instructions for these articles will be given as you receive them.


Discussion of these assignments will be reflected in your participation grade.

Grading:

Undergraduate Credit:
Participation (blackboard assignments, quizzes): 20%
3 Mid-semester exams: 20% each
1 Cumulative Final exam: 20%

Graduate Credit
Participation (there will be extra participation requirements for graduate students): 20%
3 Mid-semester exams: 15% each
1 Cumulative Final exam: 15%
Literature Review Paper: 20%

If it is to your benefit (increases your grade), the cumulative final exam can be used to replace either the lowest of your three mid-semester exam grades or your participation grade (if you use the final to replace one of the other grades, your final exam grade will end up counting for 40% of your grade).
Exams: Exams will not be strictly multiple choice, and may contain a variety of question types, including “short answer” and “fill in the blank” questions. You will receive some practice with these questions using online and in-class quizzes that will count towards your participation score. If you know that you will be missing an exam due to a religious holiday, you MUST inform me within the first 2 weeks of classes. Missed exams due to medical/psychological/family emergencies must be documented, and made up within 48 hours of the originally scheduled exam time.

Students taking the course for graduate credit will have extra reading assignments. We will discuss during the first week of class whether we can coordinate an extra weekly meeting for graduate students, as well as other ways to enhance the graduate experience.

Graduate students will meet 9:30-10:30 am in Dewey 238 on the following dates. For each date, one graduate student will choose 2-3 papers on the topic and lead the discussion. I am happy to work with students to choose the papers, but papers need to be distributed to the class at least one week prior to the discussion date. In order to lead the discussion, the graduate student in charge should also distribute 2-3 discussion questions (that incorporate material from all of the assigned papers) to the class at least one week prior to the discussion date.

1/30 Glutamate
2/13 GABA
2/20 Alcohol
2/27 Dopamine
3/13 Norepinephrine
3/20 Cocaine/amphetamine
3/27 Acetylcholine/nicotine
4/3 Serotonin
4/10 Antidepressants
4/17 Opioids/Opiates
4/24 Cannabinoids

Students taking the course for graduate credit are required to write a literature review paper: On the last day of the course, you will hand in a 3000-4000 word review paper, which synthesizes information from 6-8 articles on any topic related to psychopharmacology that I approve (I must approve the paper topic by January 27). The basic plan for this paper is as follows:

-Choose a topic (by January 27).
- Find relevant literature relating to your topic.
- Read the relevant literature and develop your own ideas.
- Outline your hypothesis, and make sure you have all of the literature required to support it.
- Write a rough draft of your paper (March 19, midnight).
- Finish your final draft of the paper incorporating my suggestions on your rough draft (April 28).

Grades for the review paper will be broken down as follows:

- Completion of rough draft: 5 points
- Originality of hypothesis and strength of argument: 5 points
- Quality of writing and supportive literature: 5 points
- Improvement and effort: 5 points

Please make sure all work is completed on time. Late work will be penalized 50% for every day it is late. Failure to read the readings (exhibited by an inability to discuss the readings in class) will result in the loss of participation points (2 points for each occurrence).

If you are going to miss a class for an excused reason (illness, religious holiday, etc.), you MUST contact me by phone or email BEFORE the start of that class period (if you wake up sick, please call or email before class starts). I may ask for documentation for an absence to be excused. I will allow ONE unexcused absence. After that, you will lose 2 points from your participation grade for each unexcused absence.

Standards of Academic Integrity: According to the UVM website (http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf)

“All academic work (e.g., homework assignments, written and oral reports, use of library materials, creative projects, performances, in-class and take-home exams, extra-credit projects, research, theses and dissertations) must satisfy the following four standards of academic integrity:

1. All ideas, arguments, and phrases, submitted without attribution to other sources, must be the creative product of the student. Thus, all text passages taken from the works of other authors must be properly cited. The same applies to paraphrased text, opinions, data, examples, illustrations, and all other creative work. Violations of this standard constitute plagiarism.

2. All experimental data, observations, interviews, statistical surveys, and other information collected and reported as part of academic work must be authentic. Any alteration, e.g., the removal of statistical outliers, must be clearly documented. Data must not be falsified in any way. Violations of this standard constitute fabrication.

3. Students may only collaborate within the limits prescribed by their instructors. Students may not complete any portion of an assignment, report, project, experiment or exam for another student. Students may not claim as their own work any portion of an assignment, report, project, experiment or exam that was completed by another student, even with that other student’s knowledge and consent. Students may not provide information about an exam (or portions of an exam) to another student without the authorization of the instructor. Students may not seek or accept information provided about an exam (or portions of an exam) from another student without the authorization of the instructor. Violations of this standard constitute collusion.

4. Students must adhere to the guidelines provided by their instructors for completing coursework. For example, students must only use materials approved by their instructor when completing an assignment or exam. Students may not present the same (or substantially the same) work for more than one course without obtaining approval from the instructor of each course. Students must adhere to all course reserves regulations, including library course reserves, which are designed to allow students access to all course materials. Students will not intentionally deny others free and open access to any materials reserved for a course. Violations of this standard constitute cheating.”
**Plagiarism**
The work you do in this course must be your own. This means that you must be aware when you are building on someone else's ideas—including the ideas of your classmates, your professor, and the authors you read—and explicitly acknowledge that you are doing so. Feel free to build on, react to, criticize, and analyze the ideas of others but, when you do, make it known whose ideas you are working with. If you ever have questions about drawing the line between others' work and your own, ask me and I will give you clear guidance or you may visit UVM’s website regarding Academic Integrity at [http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf](http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf)

If you find that your paper has unoriginal text that is not properly cited, you should either cite it or remove it. If you do not, you are likely committing plagiarism. Also, if you remove or reword the unoriginal text, but retain the idea expressed by the source, you must give a citation that names the source. Remember, your work should build on the class discussions, reading, lectures, remarks, etc., but the paper you write *must* be your own work.

**Classroom Environment: University of Vermont Classroom Code of Conduct.**
Faculty and students will at all times conduct themselves in a manner that serves to maintain, promote, and enhance the high quality academic environment befitting the University of Vermont. To this end, it is expected that all members of the learning community will adhere to the following guidelines:

1. Faculty and students will attend all regularly scheduled classes, except for those occasions warranting an excused absence under the University Attendance Policy (e.g., religious, athletic, and medical).
2. Students and faculty will arrive prepared for class and on time, and they will remain in class until the class is dismissed.
3. Faculty and students will treat all members of the learning community with respect. Toward this end, they will promote academic discourse and the free exchange of ideas by listening with civil attention to comments made by all individuals.
4. Students and faculty will maintain an appropriate academic climate by refraining from all actions that disrupt the learning environment (e.g., making noise, ostentatiously not paying attention, leaving and reentering the classroom inappropriately).
5. Students and the instructor should turn off cell phones and not use TEXT MESSAGING during class. Surfing the web is not an acceptable behavior in class unless it is an explicit part of the class assignment. Students can bring lap tops to take notes and to open pdf files the instructor assigned for readings. Students must ask permission to the instructor before they utilize their lap tops for any other activity.

**Religious Holidays:** According to UVM guidelines, students have the right to practice the religion of their choice. Each semester students should submit in writing to their instructors by the end of the second full week of classes their documented religious holiday schedule for the semester. Faculty must permit students who miss work for the purpose of religious observance to make up this work.

**Accommodations for Students with Disabilities:** If you have a disability for which you are or may be requesting accommodations, please contact UVM's ACCESS Office (Accommodation, Consultation, Collaboration & Educational Support Services) by phone (656-7753) or email
That office will guide you through the processes that are required for accommodations to be made.

Schedule:
Below is the course outline. In parentheses are pages from the textbook that you will be expected to have read by that day (i.e. please have pages 2-25 read by January 20). We will also read from original research articles that I will provide as the semester progresses.

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<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan. 13</td>
<td>Introduction to course</td>
<td>Review Ch. 2-3</td>
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<td>Jan. 15</td>
<td>Neuroscience Review</td>
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<td>Jan. 20</td>
<td>Pharmacokinetics</td>
<td>p. 2-25</td>
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<td>Jan. 22</td>
<td>Pharmacodynamics</td>
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<td>3</td>
<td>Jan. 27</td>
<td>Amino Acid Neurotransmitters: Glutamate</td>
<td>GRAD paper topic due.</td>
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<td>4</td>
<td>Feb. 3</td>
<td><strong>EXAM 1</strong> Amino Acid Neurotransmitters: GABA</td>
<td>p.217-224</td>
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<td></td>
<td>Feb. 5</td>
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<td>5</td>
<td>Feb. 10</td>
<td>Amino Acid Neurotransmitters: GABA</td>
<td>Ch. 10, p. 531-542</td>
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<td></td>
<td>Feb. 12</td>
<td>Catacholamines: Dopamine</td>
<td>p. 143-157</td>
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<td>Feb. 17</td>
<td>Catacholamines: Dopamine and Norepinephrine</td>
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<td>Cocaine and Amphetamine</td>
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<td>March 2</td>
<td>Spring Recess</td>
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<td>March 5</td>
<td>Spring Recess</td>
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<td>March 10</td>
<td>Acetylcholine</td>
<td>Ch. 7</td>
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<td>March 12</td>
<td>Acetylcholine / Nicotine</td>
<td>p. 374-393</td>
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<td>March 17</td>
<td>Serotonin</td>
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<td>March 19</td>
<td>Serotonin</td>
<td>GRAD rough draft due</td>
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<td>11</td>
<td>March 24</td>
<td>LSD and Psilocybin</td>
<td>p. 430-441</td>
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<td>March 26</td>
<td>Affective Disorders: Antidepressants</td>
<td>Ch. 19</td>
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<td>Date</td>
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<td>March 31</td>
<td>EXAM 3</td>
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<td>April 2</td>
<td>Affective Disorders: Antidepressants</td>
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<td>13</td>
<td>April 7</td>
<td>Opiates</td>
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<td>April 9</td>
<td>Opiates</td>
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<td>14</td>
<td>April 14</td>
<td>Cannabinoids</td>
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<td>April 16</td>
<td>Cannabinoids</td>
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<td>15</td>
<td>April 21</td>
<td>Theories of Addiction</td>
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<td>April 23</td>
<td>Theories of Addiction</td>
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<td>16</td>
<td>April 28</td>
<td>Synthetic legal intoxicating drugs</td>
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<td><strong>Dec. 13</strong></td>
<td><strong>FINAL EXAM: TBD</strong></td>
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