

MCB 62 / L&S 30 / PSY 119 - DRUGS AND THE BRAIN / DRUGS AND BEHAVIOR

**Department of Molecular and Cell Biology
College of Letters and Sciences
Department of Psychology**

University of California, Berkeley - Fall Semester 2005

Nowhere are the connections between chemistry, cell biology, physiology, psychology, sociology, public policy, and constitutional law more vividly illustrated than in understanding the effects of drugs on the human brain and human behavior. This course will deal with just that: the biology, chemistry, psychology, and sociology of psychoactive drugs. Such substances - which include stimulants, sedatives, psychedelics, analgesics, antidepressants, antipsychotics, and others - have powerful effects on the human brain and on human behavior. The origins of drugs as components of plants that have enjoyed deep historical relationships with humankind will be emphasized.

Required texts: *Pharmako/Poeia* by Dale Pendell Mercury House (1995)
Pharmako/Dynamis by Dale Pendell Mercury House (2002)

Course Reader at Copy Central on Bancroft

Optional textbook: *Drugs, Society, and Human Behavior* by C Ksir, CL Hart, & O Ray McGraw-Hill (2005)

Copies of the textbooks (but not the reader) are available on 2-hour reserve in the Moffitt Undergraduate Library.

Two Lectures and one required Discussion Section meeting each week

Lecture times: Tuesday and Thursday at 3:30 - 5:00 pm - Wheeler Auditorium

Instructor: David Presti 249 Life Sciences Addition (LSA)
phone and voicemail: 643 2111 <presti@berkeley.edu>

Office hours: Tue 1-1:30 pm, Wed 2-2:30 pm, Thur 11:30 am-12 pm, and other times, in 249 LSA.
I will also generally be available after each lecture.

Graduate student instructors, and their email addresses:

Jennie Chen <chen_jennie@berkeley.edu>
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The GSIs are here to help you get the most from this class and you are encouraged to talk with your GSI. Your GSI will see you in weekly Discussion Section and will also be available to meet with you individually by appointment. Don't be shy!

Discussion sections times, locations, and GSI.

101	Mon	9-10	2308 Tolman	Melanie
102	Tues	1-2	223 Dwinelle	Anna
103	Wed	1-2	340 Moffitt	Derek
104	Thur	8-9	229 Dwinelle	Marcela
105	Wed	2-3	223 Dwinelle	Anna
106	Mon	1-2	209 Dwinelle	Jennie
107	Tues	8-9	24 Wheeler	Marcela
108	Wed	9-10	340 Moffitt	Melanie
109	Thur	1-2	223 Dwinelle	Angie
110	Fri	3-4	215 Dwinelle	Grant
111	Mon	3-4	109 Dwinelle	Jennie
112	Mon	4-5	340 Moffitt	Derek
113	Fri	10-11	100 Wheeler	Angie
114	Fri	1-2	209 Dwinelle	Joe
115	Tues	9-10	110 Barker	Grant
116	Wed	11-12	110 Barker	Emily
117	Thur	11-12	110 Barker	Joe
118	Fri	8-9	110 Barker	Emily

Grading: Course grade will be based on two midterm exams (24% each), one final exam (31%), and several assignments to be administered through discussion section (21%). These include three homework assignments (2% each), a debate (5%), and a term paper (10%) (5 pages for MCB 62 and L&S 30; 10-15 pages for PSY 119).

You cannot earn better than a "C-" grade in this course without turning in all three of the homework assignments, participating in the debate, and turning in an acceptable term paper. If you are taking the course pass/not-pass, you must turn in all of the homework, participate in the debate, and turn in an acceptable term paper in order to pass the course.

Exams will consist of multiple choice, true-false, and short answer questions. Each midterm exam covers the preceding portion of the course and draws from material in lectures, discussion sections, and readings. The final exam is comprehensive and covers material from the entire semester.

- midterm exam one is on **Thur Oct 6** at 3:30 - 5:00 pm in Wheeler Auditorium
 - midterm exam two on **Thur Nov 17** at 3:30 - 5:00 pm in Wheeler Auditorium
 - final exam (covering the entire semester) on **Thur Dec 8** at 3:30 - 5:00 pm in Wheeler Auditorium
 - we cannot change the days and times for these exams; mark your calendars now
 - preparatory review sessions will be held at a time and place to be announced prior to each exam
 - there will generally be no make-up exams
 - if you miss an exam, you will receive zero points for that exam
 - if you miss a midterm exam with a credible excuse (e.g., well-documented medical problem), then your other exams will count proportionally more in determining your course grade
 - if you miss the final exam with a credible excuse, you will receive an incomplete grade for the course
- your term paper must be in your GSI's hands by **Wednesday Nov 9** at 4 pm

- Your term paper may be turned in prior to this deadline and we encourage you to do so. A good time would be during discussion section of that week. You may also turn the paper in during lecture on Tues Nov 8. We suggest that you use this assignment as an opportunity to not wait until the last minute.
- The due date for electronic submission of your term paper at www.turnitin.com is midnight on Thursday Nov 10.
- Instructions for electronic submission will be provided in class.
- The term paper is meant to be a fun assignment - an opportunity to learn more about a topic which you find particularly interesting. Hopefully there will be many such topics!
- homework 1 is about plant ritual - due the week of Sept 19-23
- homework 2 is an annotated bibliography of reference material for your term paper - due the week of Oct 17-21
- homework 3 is a description and analysis of a media report - due the week of Nov 28-Dec 2
- detailed instructions for the homework and term paper are provided in the course reader
- late assignments may not be accepted and will definitely not receive full credit
- there will be three debates conducted in discussion section, with a third of the class involved in each of the debates
- debate guidelines are in the course reader
- debate topics will be announced in discussion section

- Week 1: 29 Aug - 2 Sept** Course logistics. Overview. Drugs, poisons, plant medicines, curanderos, abuse, addiction. (reading: Poeia pages 1-27) History and classification of drugs. (DSHB chapters 1-3)
- Week 2: 5 - 9 Sept** Discussion sections meetings commence. How drugs enter the body and the brain. Membranes, neurons, synapse, neurotransmitters, receptors, pharmacology, chemical structures. (DSHB chapters 4-5)
- Week 3: 12 - 16 Sept** Brain and autonomic nervous system. Alkaloids and plant biochemistry. Hallucinogenic solanaceous plants. (DSHB chapters 4-5 and 359-364)
- Week 4: 19 - 23 Sept** Tobacco and nicotine. (Poeia 28-50) (DSHB chapter 10)
Homework One due in discussion section.
- Week 5: 26 - 30 Sept** Alcoholic beverages, including mead and aqua vitae. (Poeia 51-82 & 93-97) (DSHB chapter 9) Sedative-hypnotics, inhalants, general anesthetics. (Poeia 83-92 & 145-153) (DSHB chapter 7) *Debate One in discussion section.*
- Week 6: 3 - 7 Oct** Absinthe. (Poeia 99-115) Essential oils and spices. (Dynamis 199-205)
Midterm Exam One on Thur Oct 6.
- Week 7: 10 - 14 Oct** Opium, opioids, and endorphins. (Poeia 117-143) (DSHB chapter 13) Cannabis. (Poeia 177-209) (DSHB chapter 15) *Debate Two in discussion section.*
- Week 8: 17 - 21 Oct** Salvia divinorum. (Poeia 155-177) (DSHB page 364) PCP, ketamine. (DSHB 354-359) Ephedra, khat, amphetamine. (Dynamis 127-155) (DSHB chapter 6)
Homework Two due in discussion section.
- Week 9: 24 - 28 Oct** Coca and cocaine. (Dynamis 156-183) (DSHB chapter 6) Caffeine, coffee, tea. (Dynamis 1-72) (DSHB chapter 11) *Debate Three in discussion section.*
- Week 10: 31 Oct - 4 Nov** Cacao and chocolate (Dynamis 73-118) Betel (Dynamis 119-126) Psychosis, depression, psychiatric medications. (DSHB chapter 8)
- Week 11: 7 - 11 Nov** Mania, bipolar disorder, psychiatric, biological psychiatry (DSHB chapter 8)
Veterans Day holiday on Thursday Nov 11, no discussion sections.
Term paper due by Wednesday Nov 9 at 4 pm.
- Week 12: 14 - 18 Nov** Psychedelics, LSD (DSHB chapter 14).

Midterm Exam Two on Thur Nov 17.

- Week 13: 21 - 25 Nov** Psychedelic mushrooms, ayahuasca, (DSHB chapter 14)
Thanksgiving holiday, **give thanks**. No class and discussion sections on Thur and Fri.
- Week 14: 28 Nov - 2 Dec** Mescaline and peyote. (DSHB chapter 14)
MDMA. (Dynamis 206-220) Other phenethylamine and tryptamine psychedelics.
Homework Three due in discussion section.
- Week 15: 5 - 8 Dec** Nitrous oxide. Brain and mind. (Poeria 209-239)
Final Exam on Thur Dec 8.

- University holidays
- no discussion section meetings or lectures on these days

September 5 - Labor day
November 11 - veterans day
November 24 - Thanksgiving
November 25 - day after Thanksgiving

Important astronomical dates and days of ancient ritual:

New Moons:	September 3, October 3, November 1, December 1
Full Moons:	September 17, October 17, November 15, December 15
Autumn Equinox:	September 22
Winter Solstice:	December 21
Partial Lunar Eclipse:	October 17
Halloween/Samhain:	October 31

- reference for lunar and solar information:
 - <aa.usno.navy.mil> "Astronomical Applications Department of the US Naval Observatory"
 - an awesome website!

Move forward with alchemy . . .