

Course Syllabus: Psychology 5500
Drugs and Behavior
Section 02 (Call# 42537)
Fall 2007

Instructor	Amy Odum, Ph.D.	Course Time	T R 3:00 – 4:15
Office	496 Education	Course Room	Education 132
Office Hours	M 1:30 – 2:30; W 10:30 – 11:30 and by appointment	Telephone	797-5578
		E-mail	Amy.Odum@usu.edu

Required Text *Behavioral Pharmacology*. Poling, A. & Byrne, T. (2000). Context Press.

Required Readings On electronic reserve at the library: <http://eres.usu.edu/>

Prerequisites Psy 1400 (Analysis of Behavior)
 Psy 3400 (Advanced Analysis of Behavior), min. ‘B’ *strongly* recommended

Course Topic

This course covers topics in behavioral pharmacology. This field is the synthesis of the experimental analysis of behavior and pharmacology. We will examine the behavioral effects of drugs using the methods and concepts from behavior analysis. We will also relate these effects to principles of pharmacology.

In the first part of the course, we will focus on basic concepts in behavior analysis, pharmacology, and neuropharmacology. In the next section, we will focus on research techniques for assessing the effects of drugs on the behavior of nonhumans and humans. The final section will examine factors that modify the effects of drugs on behavior, including drug taking in humans.

The readings for the course will come from the text *Behavioral Pharmacology*, review articles and chapters, and recent articles from the primary scientific literature. The readings (besides the text) will be available on Electronic Reserve: <http://eres.usu.edu/>. The password is ODU5500. This is an advanced course, so you should be aware that some of these readings you will probably find quite challenging. You should allow yourself plenty of time to read and re-read the material before each class.

Course Method

During class meetings, we will **discuss** the material that you have read for that day (see Course Schedule). I will cover the major points in the material, but I expect you to actively contribute as well by bringing up related points and/or asking questions.

Tip: Write down a few possible questions as you read the material to help you think of what to say in class later.

Class participation is worth 100 points (10% of your grade), given at the end of the semester. I will give you a mid-semester estimate of your participation grade as well, and you are welcome to ask at any point to see how you are doing.

There will also be 17 **short essay quizzes** on the days noted in the Course Schedule. These quizzes are designed to give you timely feedback about your comprehension of the basic elements of the reading and to help you stay on course with the reading material. They will be over small amounts of material (see Course Schedule).

Tip: Write out and practice your answers to the Reading Guide for each quiz (to be posted on the Discussion Board at Electronic Course Reserves).

The short quizzes are each worth 20 points, or 2% of your grade. Your lowest 2 quiz scores will be dropped. The total portion of your grade determined by quizzes is 30% (15 quizzes x 20 points each is 300 points). You will be able take a **missed quiz** only if you have a documented and compelling reason for your absence during the

quiz. You should let me know as soon as you realize you might miss a quiz. **If** you are allowed to take a make-up quiz, it will be during the departmental wide make-up times at the end of the semester (to be announced).

There will also be 2 **essay examinations** - a mid-term and a final (see Course Schedule). These examinations will provide a more in-depth assessment of your understanding of the material and will each cover roughly one half of the course material. Each examination is worth 200 points, or 20% of your grade. You will be able take a **missed examination** only if you have a documented and compelling reason for your absence during the exam. You should let me know as soon as you realize you might miss an exam. **If** you are allowed to take a make-up mid-term exam, it will be during the departmental wide make-up times at the end of the semester (to be announced).

There will be 1 **paper** on a topic of your choosing. The paper should cover a human drug problem or treatment *and* an animal model of that problem. It should be 8 – 10 pages long (not including title page and references) and be written in the style advocated by the American Psychological Association (APA). Your paper should contain at least some material, including journal articles, that is not covered in class. You will receive a detailed handout in class describing the paper requirements. You will first discuss your topic with me during a private meeting outside of class time. Then you will hand in a draft that is worth 50 points (5% of your grade). You will then revise your paper and turn in the final draft, which is worth 150 points (15% of your grade). Please turn your paper in to my box in the front office by 4:00 p.m. on the day that it is due.

Please do not engage in **academic dishonesty** of any kind in this course. Academic dishonesty of any kind will result in the appropriate consequences under institutional guidelines.

Assessment Summary

Note: Drop lowest two quiz grades

Source	Percentage of Total	Possible Points	Your Points (Record Here)
Quiz 1	2%	20	
Quiz 2	2%	20	
Quiz 3	2%	20	
Quiz 4	2%	20	
Quiz 5	2%	20	
Quiz 6	2%	20	
Quiz 7	2%	20	
Quiz 8	2%	20	
Quiz 9	2%	20	
Quiz 10	2%	20	
Quiz 11	2%	20	
Quiz 12	2%	20	
Quiz 13	2%	20	
Quiz 14	2%	20	
Quiz 15	2%	20	
Quiz 16	2%	20	
Quiz 17	2%	20	
Mid-Term Exam	20%	200	
Draft of Paper	5%	50	
Paper	15%	150	
Participation	10%	100	
Final Exam	20%	200	
Total	100%	1000	

Final Grade	Point Range
A	1000-925
A-	924-900
B+	899-875
B	874-825
B-	824-800
C+	799-775
C	774-725
C-	724-700
D+	699-675
D	674-625
D-	624-600
F	599 and less

Day	Date	Topic	Course Schedule
T	08/28	Introduction	
R	08/30	Introduction – Poling Chapter 1	
T	09/04	Quiz 1: Principles of Behavior Analysis – Poling Chapter 2	<i>Final Exam</i> Thursday, Dec 13 1:30 p.m. – 3:20 p.m. Educ 132
R	09/06	Principles of Behavior Analysis – Poling Ch. 2 <i>continued</i>	
T	09/11	Quiz 2: Principles of Pharmacology – Poling Chapter 3	See second page for description of grade calculation.
R	09/13	Principles of Pharmacology – Poling Ch. 3 <i>continued</i>	
T	09/18	Quiz 3: Neuropharmacology – Poling Chapter 4	
R	09/20	Neuropharmacology – Poling Ch. 4 <i>continued</i>	
T	09/25	Quiz 4: Neuroscience of Substance Dependence – WHO (Course Reserve1); Paper Meetings	
R	09/27	Quiz 5: Basic Issues in the Use of Animals in Health Research – Overmier and Carroll (CR2); & Ethical Issues in the Use of Animals – Gluck and Bell (CR3); Paper Meetings	
T	10/02	Quiz 6: Assessing Drug Effects in Nonhumans – Poling Chapter 5; Paper Meetings	
R	10/04	Assessing Drug Effects in Nonhumans – Poling Ch. 5 <i>continued</i> ; Paper Meetings	
T	10/9	Midterm Examination	
R	10/11	Quiz 7: Animal Models of Relapse – Carroll and Comer (Course Reserves4)	
T	10/16	Quiz 8: Contributions of Contingent and Noncontingent Cocaine – Kippin et al. (CR5); & Influence of Reinforcing Effects of Cocaine – Banks et al. (CR6)	
R	10/18	Quiz 9: Aripiprazole Blocks Reinstatement of Cocaine Seeking – Feltenstein et al. (CR7); & Reduction in Methamphetamine Induced Sensitization and Reinstatement – Davidson et al. (CR8)	
T	10/23	Quiz 10: Basic Research with Humans – Poling Chapter 6	
R	10/25	Basic Research with Humans – Poling Ch. 6 <i>continued</i>	
T	10/30	Quiz 11: A Review of Delay-Discounting Research with Humans – Reynolds (CR9)	
R	11/01	Quiz 12: Delay Discounting and Postpartum Relapse – Yoon et al. (CR10) & Neuropsychological Functioning and Delay Discounting in Methamphetamine – Hoffman et al. (CR11)	
T	11/06	Quiz 13: Stimulus Properties of Drugs – Poling Chapter 7	
R	11/08	Stimulus Properties of Drugs – Poling Ch. 7 <i>continued</i>	
T	11/13	Quiz 14: Variables that Influence Drug Action – Poling Chapter 8	
R	11/15	Variables that Influence Drug Action – Poling Ch. 8 <i>continued</i>	
F	11/16	Draft of Paper Due – 4 p.m.	
T	11/20	Quiz 15: Acquisition of Drug Self-administration – Campbell & Carroll (Course Reserves12)	
R	11/22	No class – Thanksgiving holiday	
T	11/27	Quiz 16: Low Dose Nicotine Treatment during Early Adolescence – McQuown et al. (CR13) Environmental Modulation of Cocaine Self-administration - Caprioli et al. (CR14)	
R	11/29	Quiz 17: Drug Abuse – Poling Chapter 10	
M	12/03	Paper due – 4 p.m.	
T	12/04	Drug Abuse – Poling Ch. 10 <i>continued</i>	
R	12/06	Review	

Course Readings

Text

Poling, A., & Byrne, T. (2000). *Behavioral Pharmacology*. Reno, NV: Context Press.

Readings (on Course Reserves)

Banks, M. L., Czoty, P. W., & Nader, M. A. (2007). The influence of reinforcing effects of cocaine on cocaine-induced increases in extinguished responding in cynomolgus monkeys. *Psychopharmacology*, *192*, 449-456.

Campbell, U. C., & Carroll, M. E. (2000). Acquisition of drug self-administration: Environmental and pharmacological interventions. *Experimental and Clinical Psychopharmacology*, *8*, 312-325.

Caprioli, D., Paolone, G., Celentano, M., Testa, A., Nencini, P., & Badiani, A. (2007). Environmental modulation of cocaine self-administration in the rat. *Psychopharmacology*, *192*, 397-406.

Carroll, M. E., & Comer, S. D. (1996). Animal models of relapse. *Experimental and Clinical Psychopharmacology*, *4*, 11-18.

Davidson, C., Gopalan, R., Ahn, C., Chen, Q., Mannelli, P., Patkar, A. A., et al. (2007). Reduction in methamphetamine induced sensitization and reinstatement after combined pergolide plus ondansetron treatment during withdrawal. *European Journal of Pharmacology*, *565*, 113-118.

Feltenstein, M. W., Altar, C. A., & See, R. E. (2007). Aripiprazole blocks reinstatement of cocaine seeking in an animal model of relapse. *Biological Psychiatry*, *61*, 582-590.

Gluck, J., & Bell, J. (2003). Ethical issues in the use of animals in biomedical and psychopharmacological research. *Psychopharmacology*, *171*, 6-12.

Hoffman, W. F., Moore, M., Templin, R., McFarland, B., Hitzemann, R. J., & Mitchell, S. H. (2006). Neuropsychological function and delay discounting in methamphetamine-dependent individuals. *Psychopharmacology*, *188*, 162-170.

Kippin, T., Fuchs, R., & See, R. (2006). Contributions of prolonged contingent and noncontingent cocaine exposure to enhanced reinstatement of cocaine seeking in rats. *Psychopharmacology*, *187*, 60-67.

McQuown, S. C., Belluzzi, J. D., & Leslie, F. M. (2007). Low dose nicotine treatment during early adolescence increases subsequent cocaine reward. *Neurotoxicology and Teratology*, *29*, 66-73.

Overmier, J. B., & Carroll, M. E. (2001). Basic issues in the use of animals in health research. In M. E. Carroll & J. B. Overmier (Eds.), *Animal research and human health* (pp. 3 – 13). Washington, DC: American Psychological Association.

Reynolds, B. (2006). A review of delay-discounting research with humans: Relations to drug abuse and gambling. *Behavioural Pharmacology*, *17*, 657-667.

World Health Organization. (2004). *Neuroscience of psychoactive substance use and dependence* [Summary]. Geneva: World Health Organization.

Yoon, J. H., Higgins, S. T., Heil, S. H., Sugarbaker, R. J., Thomas, C. S., & Badger, G. J. (2007). Delay discounting predicts postpartum relapse to cigarette smoking among pregnant women. *Experimental and Clinical Psychopharmacology*, *15*, 176-186.