Learning & Conditioning

CLPS 0100
Spring 2013
MWF 1:00 – 1:50 pm

Prof. Ruth M. Colwill

Contact information:

Instructor:	Prof. Colwill
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TA Office hours and location will be announced in class.

Course description:

The aim of this course is to introduce you to the fundamental principles that govern learning and memory. Those principles will be derived primarily from a consideration of studies that examine how we detect (1) relations between events, and (2) the relations between behavior and its consequences. We shall focus on studies with animals and discuss how expectations are formed and how those expectancies control behavior. In addition, we shall consider some of the contributions that the study of animal learning has made to our understanding and management of behavior outside of the laboratory.

Course materials:

Domjan, M. (2010). The *Principles of Learning and Behavior*, (Sixth edition), Wadsworth Cengage Learning: Belmont, CA. (Copy available on reserve at the Rock).

This course will use Canvas and iClickers. It is your responsibility to obtain a clicker by class time on Monday Jan 28.

Attendance and Class Etiquette:

All students are expected to attend class and to arrive on time. If you have to miss a class, you are responsible for finding another student to take notes for you and for reviewing the missed material with a TA. Students are responsible for all material, including changes to the syllabus presented in class. **Please turn off all cell phones and iPods during class. No calls should be answered during class. No texts should be sent in class.** If you forget to turn off your phone and it rings please turn it off immediately. If the call relates to an emergency, please sit near an exit so that you can leave the classroom unobtrusively to take the call. Laptop use is permitted ONLY for note-taking. Internet use during class time is expressly forbidden and may be grounds for grade reduction and/or dismissal from the class. These policies are in effect during guest lectures.

Course evaluation:

Exam 1	25%	Fri 2/15
Semester Project	15%	PSEPs: Proposal due Wed 3/6; Final report due Wed 5/1
Exam 2	25%	Wed 3/20
Personal portfolio	10%	iClicker, notebook, questions, comments, assignments, etc
Exam 3	25%	Wed 4/24

All exams are in-class closed book examinations. I consider knowledge to be cumulative and later exams will assume you have not forgotten principles and concepts tested on earlier exams. Deadlines for assignments are fixed so plan ahead. Make-up exams will be administered in the Final Exam slot. Queries about grading of exams or homework assignments must be made in writing to Professor Colwill within 48 hours of receipt of grade.

Grading policy:

It is expected that a student awarded an "A' in this course will have attended class, turned in outstanding assignments including the Semester Project, and demonstrated on the exams an excellent knowledge of the course material and a superior grasp of the following specific topics and principles:

- Design concepts eg control procedures, t1-t2 framework, scaling problems
- Distinction between Pavlovian conditioning and instrumental learning
- Distinction between learning and performance
- Rescorla-Wagner model
- Theories of instrumental learning
- Mechanisms of extinction

A passing grade is awarded for a final score in the range of 65-79%. Bs are generally in the range of 80-89%.

Accommodations:

If you have a documented learning difference and require related accommodations (i.e. extra time for exams, separate room), it is your responsibility to meet with me early in the semester so that I can make the necessary arrangements. Please bring a current copy of your academic accommodations letter from Disability Support Services.

Academic Integrity:

I strongly encourage you to talk with your peers about the material we discuss in class and to form study groups to prepare for exams. Not only will you develop a better understanding of the material, but you may also discover new friendships that could last a lifetime. Please note, however, that these collaborations must not extend to the PSEP project or to the exams themselves. You must work independently on your project and you must work alone on exams. It is your responsibility to be honest and to report any cheating. I expect that you will familiarize yourself with the University's Academic Code and that you will demonstrate impeccable academic integrity. You can review the details of the Academic Code here:
http://www.brown.edu/Administration/Dean_of_the_College/curriculum/documents/principles.pdf

Disclosure: CLPS TA policy "**Please note that TA assignments try to optimize needs, current and projected enrollment figures, preferences, and fit. We hope to minimize re-assignments, but enrollment figures or sudden status changes may require adjustments as the term begins."** I have designed my course and assignments based on the current enrollment figure and the tentative TA assignments. Adjustments may be required if these factors change.

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Spring 2013: Syllabus

I. Review (Ch 1)
- a. Introduction
  - (i) Why is learning important?
  - (ii) Why study learning in animals?
- b. Basic learning paradigms
  - (i) Learning about individual events
  - (ii) Learning about relations between events
  - (iii) Learning about relations between behavior and events
- c. Three questions about learning
  - (i) Conditions for learning
  - (ii) Content of learning
  - (iii) Expression of knowledge

II. Learning about individual events (Ch 2)
- a. Demonstration
- b. Assessment procedures
- c. Habituation: Data and theory
- d. Bouncing balls and zebrafish larvae

III. Learning about relations between events (Chs 3-4)
- a. Excitatory conditioning: Acquisition
  - (i) Demonstration
  - (ii) Conditions for learning
    1. Temporal contiguity
    2. Surprise
  - (iii) Theory: Rescorla-Wagner model
  - (iv) Qualitative relations and constraints
- b. Addiction and tolerance

IV. Learning about relations between behavior and events (Chs 5-6, 10)
- a. Procedures and examples
- b. Shaping a new behavior
  - (i) Demonstration
  - (ii) Premack's principle
- c. Reward and punishment

V. Associative Structure of Instrumental Learning (Ch 7)
- a. Outcome devaluation and other tools
- b. Theories: What is learned?
  - (i) S-R theory
  - (ii) Two process theories
  - (iii) R-O theory
  - (iv) Hierarchical associations

VI. Stimulus Control of Behavior (Ch. 8)
- a. Generalization and discrimination
- b. Contextual and conditional cues

VII. Extinction and Inhibition (Ch 9)
- a. Procedures and data
- b. Mechanisms of response loss

(i) Erasure or inhibition
(ii) Degradation of event representation
(iii) Changes in event processing
(iv) Counterconditioning and systematic desensitization

c. Inhibitory conditioning
(i) Conditions for learning
(ii) Assessment procedures
(iii) Locus of action

VIII. Cognitive Processes (Chs 11 – 12)
a. Memory
b. Reasoning

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Semester Project: Practical Solutions for Everyday Problems (PSEPs)

Assigned 01/23/13
Proposal due 3/6
Final report due 5/1

Is there something about your behavior that you would like to change? Well, here's your chance to do so and get credit! This assignment gives you an opportunity to design and implement a program to change your behavior. The first step is to decide what behavior to change within the areas of healthier living (diet, exercise, sleeping, posture), laptop use, study habits, or tidiness (room, appearance). Be very specific in formulating your goal (e.g., "to eat a mixed-greens salad three times a week" is better than saying "to eat a healthier diet"). The next step is to collect baseline data on that behavior (e.g., keep a food log detailing what you eat and when, where and with whom you eat it). Baseline data are essential to evaluating the effectiveness of the practical solution you will design and implement (e.g., punishment, reinforcement, environmental contingency). You will need to keep track of and graph your success. Your grade will be based on your initial proposal and a final written report (format flexible) of what you did.

