



# CLPS 1192: Experimental Analysis of Animal Behavior and Cognition

## Fall, 2012 Syllabus

**Professor:** Russell M. Church

Office Hours: Wednesdays 3:00 - 3:50 p.m. in Metcalf 245, and by appointment  
email: [Russell\\_Church@brown.edu](mailto:Russell_Church@brown.edu)

**This is a laboratory course on the prediction, control, and explanation  
of the behavior of animals in simple environments.**

**Teaching Assistant:** Katie Kalafut [Kathryn\\_Kalafut@brown.edu](mailto:Kathryn_Kalafut@brown.edu)  
Office Hours: 2:30-3:30pm Monday Metcalf 107

Day	Time	Lab Room	Activity
Tuesdays	10:30 - 11:50 am	BMC 112B	Behavior Observation
Thursdays	10:30 - 11:50 am	Metcalf 107	Data Analysis

## A. Goals of the course

1. To learn skills useful for the experimental analysis of behavior (and other purposes)
2. To form new attitudes, which may include:
  - a. Animal appreciation, especially for the cognitive capacities of rats and other animals
  - b. Psychological science appreciation, especially the extent to which behavior can be predicted

## B. What you will do:

1. Tuesdays 10:30 - 11:50: In the Behavior Observation Laboratory, you will (a) observe your rat doing tasks designed to reveal perception, memory, decision, and other psychological processes, and (b) collect extensive data for analysis.
2. Thursdays 10:30 - 11:50: In the Data Analysis Laboratory, you will learn to use Matlab for exploratory data analysis of the behavior of your rat.
3. In a typical week, you will (a) read an assigned article, (b) prepare for a discussion topic, and (c) write a section of a laboratory report.
4. The independent project at the end of the semester will give you the opportunity to use the skills you will have developed during the semester.

## C. What you will learn:

1. Facts and principles of animal behavior and cognition
2. Methods for the experimental analysis of behavior and cognition
  - a. Animal care
  - b. Observation of behavior
  - c. Experimental design
  - d. Data collection
  - e. Data analysis
  - f. Interpretation of results
  - g. Literature search
  - h. Manuscript preparation

## D. Evaluation will be based on:

- |                            |      |
|----------------------------|------|
| 1. Final research project  | 20%  |
| 2. Written assignments     | 30%  |
| 3. Midsemester examination | 15%  |
| 4. Final examination       | 25%  |
| 5. Participation           | 10%  |
|                            | 100% |



## Schedule of Laboratory Meetings and Lectures

### Philosophy

**Thur., Sept 6** *Lecture: "Philosophical bases for the study of animal behavior"*

### History

**Tues., Sept 11** *Lecture: "Historical bases for the study of animal behavior"*

**Thur., Sept 13** *Lecture: "A review of simple conditioning"*

### Comparative Psychology

**Tues., Sept 18** *Lecture: "The behavior of rats"*

**Thur., Sept 20** *Data Analysis: Matlab Introduction*

### Description of behavior

**Tues., Sept 25** **Behavior Laboratory 1: *Observation of behavior***

**Thur., Sept 27** **Data Analysis Laboratory: *Tables and descriptive statistics***

### Learning a response

**Tues., Oct 2** **Behavior Laboratory 2: *Learning a response***

**Thur., Oct 4** **Data Analysis Laboratory: *Figures***

### Temporal learning

**Tues., Oct 9** **Behavior Laboratory 3: *Learning when to respond (initial performance)***

**Thur., Oct 11** **Data Analysis Laboratory: *Primary data***

**Tues., Oct 16** **MIDTERM EXAMINATION**

**Thur., Oct 18** **Data Analysis Laboratory: *Statistical analysis of data***

**Temporal learning (con'd)**

**Tues., Oct. 23** **Behavior Laboratory 4: *Learning when to respond (after experience)***

**Thur., Oct 25** **Data Analysis Laboratory: *Primary data***

**Transfer of training**

**Tues., Oct. 30** **Behavior Laboratory 5: *A transfer test***

**Thur., Nov 1** **Data Analysis Laboratory: *Explaining data with equations (curve fitting)***

**Decision**

**Tues., Nov 6** **Behavior Laboratory 6: *Choosing between responses (initial performance)***

**Thur., Nov 8** **Data Analysis Laboratory: *Explaining data with models***

**Decision (con'd)**

**Tues., Nov 13** **Behavior Laboratory 6: *Choosing between responses (after experience)***

**Thur., Nov 15** **Data Analysis Laboratory: *Evaluation of models with a Turing test***

**Focus on final project**

**Tues., Nov 20** Discussion of final projects

**Thur., Nov 22** *Thanksgiving Recess (Nov 21 - 25)*

**Focus on final project**

**Tues., Nov 27** Lecture : Application of a model of simple conditioning

**Thur., Nov 29** **Data Analysis Laboratory: *Analyses for final project***

**Focus on final project**

**Tues., Dec 4** Lecture : Application of a model of simple conditioning (con'd)

**Thur., Dec 6** **Data Analysis Laboratory: *Analyses for final project***

**Final project reports due on Friday, December 9**

**Reading period:** Thursday, Dec 8 through Monday December 12

**Final Examination: Thursday, December 13 at 9 am (Exam Group 09)**