

Ψ C204

Research Reviews in Animal Behavior

Professor Eileen Lacey

CCN: 74949

Course Format: One and one-half hours of seminar per week.

Prerequisites: Graduate standing, basic course in animal behavior, and consent of instructor.

Credit option: Course may be repeated for credit.

Description: This course will discuss current publications in animal behavior. A student will summarize a paper and lead the discussion that follows. Occasionally, the group reviews a manuscript in preparation, or a thesis proposal. Not all participants need report, but all are expected to attend and enter into the discussions. Guest lecturers are invited each semester. Also listed as Integrative Biology C204 and Environ Sci, Policy, and Management C204. (F,SP)

Ψ 205A-B

Psychological Statistics and Data Analysis

Professor Qing Zhou

CCN: 74952

Course Overview:

Psychology 205A and 205B are a two-semester series covering the intermediate and some advanced statistical methods used in psychological research. **It is strongly recommended that students take both 205A and 205B. Entry into 205B without taking 205A will be possible only by prior arrangement.**

PSY 205A will cover analysis of variance (ANOVA) including between subjects, within subjects, mixed designs and designs with random factors. Analysis of variance is the most commonly used analysis method for experimental data in the social sciences. In this course, students will learn the theoretical rationales and methods to compute analysis of variance by hand and with a computer.

Course Objectives (205A):

At the end of the course, students are expected to:

1. Compute a variety of ANOVA designs by hand;
2. Write computer programs to analyze a variety of ANOVA designs;
3. Understand the theoretical rationales for ANOVA;
4. Identify ANOVA designs from description of experiments;
5. Interpret two-way and higher-way interactions;
6. Conduct statistical analysis to identify the source of statistical significance in a multiple group design;

7. Understand how repeated measures and random effects are incorporated in ANOVA;
8. Know where to look for information on any ANOVA design that you may encounter in your research.

Required Readings:

Textbook: **G. Keppel and T. D. Wickens: Design and analysis: A researcher's handbook (4th Edition, Prentice-Hall, 2004).**

Additional **required** readings: selected primary-source readings (journal articles and reviews) will be posted on the course website at Bspace.berkeley.edu (under the section "Resources"). These readings supplement the textbook.

Course Requirements:

1. Exams: There will be three midterm exams and one final exam. The midterm exams will only explicitly cover material since the previous exam (although much of the material is intrinsically cumulative). The final exam covers all of this semester's material.
2. Discussion: Students are expected to participate in class discussions and ask for clarification in lectures and lab sessions.
3. Homework: There will be approximately 10 homework problem sets depending on materials covered. The lowest homework score will be dropped.

Ψ 210E

Proseminar: Learning and Memory

Professor Art Shimamura

CCN: 74960

This course covers a broad array of topics, including molecular bases of memory, animal learning, neuroethology, neural plasticity, neurological syndromes, brain imaging, and cognitive aspects of human memory. The course is geared toward graduate students in the Cognition, Brain, and Behavior program. Other graduate students interested in the course should be able to demonstrate significant knowledge of learning and memory processes. Students are responsible for weekly readings and participation in class discussions. A final exam will be administered at the end of the course.

Ψ 214

Functional MRI Methods

Professor Mark D'Esposito

CCN: 74961

This course will provide an overview of functional MRI methodology. Topics to be covered include the basic physics of fMRI, the physiological basis of BOLD fMRI signal, the spatial and temporal resolution of fMRI, issues in experimental design, and statistical techniques used for analyzing fMRI data. The class will review published studies as well as ongoing research projects at Berkeley that address questions regarding these topics.

Ψ 230A

Proseminar: Clinical Psychology

Professor Allison Harvey

CCN: 74967

Psychology 230 is required for first-year students in the Clinical Science program at Berkeley; a limited number of other graduate students may take the course with permission of the instructor. The nature of clinical science is undergoing intensive scrutiny at this point in history; change is certain for the field. It is therefore an exciting and important time to be entering this fascinating multidisciplinary field of study. The purpose of Psychology 230 is to give an introduction to core issues in adult and developmental psychopathology. Each week, there are several readings, both primary source articles and review articles or chapter.

Ψ 290B

Analysis of Neural Data

Professor Frederic Theunissen

CCN: 75115

This course in advanced data analysis techniques is targeted to advance graduate students in neurosciences and psychology with a strong mathematical and programming background. We will cover the mathematics behind various techniques that have been developed recently to analyze neurophysiological data, including single unit data (spike trains), eeg, and BOLD. We will also learn to use software that implements these methods and apply those methods to real data. We will meet for a 3 hour session every week where we will first cover the theory (1.5 hour) and then use the software to analyze data (1.5 hours). You will need to have your own laptop with Matlab. The course will cover the following topics:

Advanced linear systems analysis: Linear regression in dynamical systems, Regularized regression, General Linear Models and linearized non-linear models.

Non-linear systems analysis: Spike-triggered Covariance and Maximally Informative Dimensions.

Correlation analysis: Coherence, Granger causality, Vector Auto-regression.

Information Theoretical Analyses: Entropy estimation, Mutual Information, Neural Redundancy.

Ψ 290B

The Cognitive Neuroscience of Sleep

Professor Matthew Walker

CCN: 75102

We spend one-third of our lives sleeping, yet there is no consensus answer as to why. Nevertheless, research across basic and clinical domains continues to providing tantalizing clues as to the function(s) of sleep (and even dreaming). This course aims to bring together graduates students with an interest in sleep, and on a weekly basis, present and discuss an exciting, eclectic mix of a) new and/or interesting literature, b) current and emerging results, c) theoretical models, and d) designs/ideas for new studies.

The structure of the course will involve students presenting at least three times, preferably one of each domains (paper talk, data talk, new theory/new research idea talk), depending on your background. You will also lead a group discussion after your presentation. These will be presented in a rotation by you [the students]. The format will be a (relaxed) PowerPoint presentation, lasting approximately 15 min, followed by a group discussion, again led by you [the presenter], lasting up to 20 min. We are aiming for two student presentations each week.

There will also be two classes where, instead of formal presentations, you will develop a grant proposal idea. They will take place in the middle of the course, and at the end of the course. The exercise will involve splitting up into groups (3-5 students per group), developing a hypothesis, aims, study design and predictions. This will be put together in real time, ready for a 10 min PowerPoint presentation/sell to the whole group at the end of each of those classes. More details will be given closer to the time.

The discussions are a core component of the course, and the success of the course is determined by your participation across all weeks. To facilitate this, all students in the class will be required to generate 1-2 questions about the presentation for that week. Before the start of the class, and at random, students will be asked offer their questions to help with class discussion after.

Grading:

Class presentations (50%); Discussion and participation in class (50%).

Materials and Website:

All course materials will be posted on bpace.berkeley.edu. Student responsibilities include the following:

- In the case of article presentations, all literature should be posted by the presenter *before* Friday 5PM, prior to the following Tue class. This will allow the class plenty of time to read and digest the manuscript.
- All PowerPoint presentations should first be sent by email to Matt (details to come in first meeting) *before* 10AM Monday, two days prior to the Wednesday class.
- Following feedback, the final version of the talk should then be uploaded by the presenter to the bSpace website by 9PM on the Tuesday evening before class (can be uploaded in PowerPoint or PDF format). This should similarly give people enough time to familiarize themselves with the slides and their content, ready to ask questions.

It is wise to log in to the class website at least once per week to check for announcements and the latest information about the class etc.

Advice for weekly presentation:

The purpose of having you present is not only to advance your skills in the art of communicating science, but also in leading a class discussion in a way that engenders understanding, *constructive* criticism, and triggers new insights about the material being presented. I outline below some basic (and hopefully useful) guidelines for these presentations:

- (1) Try not to have more than 4 bullet points of text per slide, and try not to present all these bullet points at once. Instead, present them sequentially, one by one.

(2) Try to use visual graphics as much as possible, in place of text. For example, if describing a critical finding from past literature, rather than write out that main finding as text, consider present the data figure from the paper itself and talk the audience through it. For the most part, text is best read (in manuscript format), images are best seen (in presentation format).

(3) If you are presenting data visually (as a figure, or table [figures are usually preferable]), try not to present the data all at once. Instead, drip-feed the data to the audience, point-by-point. Piecemeal conveyance of the data will ensure everyone understands the overall message, rather than getting overwhelmed. For example, present data for one group at a time, or one condition at a time. Even within these categories, present one data bar/correlation at a time (something that cinematographers call a “slow-reveal”, and use to great visual effect to tell complex stories comprehensively).

(4) Try not to read your bullet points out. Use them as a guide to speak from, rather than quote verbatim. What tends to happen, if you begin to read your bullet points out, is that the audience members start to read the text themselves, and stop listening to you. If you are going to read your text, word for word, it would probably be better to remain silent and let the audience read it for themselves ;)

(5) Rehearse – even just for a grad class presentation. Think about what you want to say, how you want to say it, and then distill your words and presentation to convey this efficiently and succinctly. Think of these presentations not just as part of a grad class on sleep, but another opportunity to practice the art of speaking.

Marking of the presentations will be based not only on the presentation itself, but also upon the ability to initiate, guide and maintain a group discussion (engaging all class members) thereafter.

Ψ 290B

Neuroimaging Seminar Series (NSS)

Professor Sonia Bishop

CCN: 75114

The aim of this seminar series is to provide a forum where members of the Berkeley community involved or interested in neuroimaging can come together to discuss issues pertaining to neuroimaging research. Participation is not limited to graduate students and the meeting is open to undergraduates, post-docs, faculty etc. No prior experience with neuroimaging is required. Members of the Brain Imaging Center attend and there are opportunities for people to raise questions and issues that others might be able to help them with/ comment upon. The easiest way to get feedback on a study design or analysis is through doing a project presentation. If your data is already fully analyzed this is also a great opportunity for sharing your results with the community and practicing giving a research talk. Currently (since Spring 2010) we are using a rota system with labs taking it in turn to present. In addition to project presentations, there is typically a mixture of talks, journal club items, and an analysis clinic run by Matthew Brett. There is also a monthly ‘BIC’ slot when Ben Inglis covers current UCB specific imaging acquisition issues, does Q&A and combines this with an image acquisition talk. It is intended that this meeting should encourage cross-talk between labs and sharing of expertise and give participants experience in presenting any findings that they have gathered. The aim is that this should be a meeting

that can grow to meet the needs of the local community and input as to what people would like to see/hear within the weekly meetings is welcome. Assessment for graduate student participants is based upon attendance and participation in the weekly discussion.

Ψ 290H

Seminar on Infancy

Professor Joseph Campos

CCN: 75116

The seminar will consist of readings and discussions on major issues and topics in the area of emotional communication in infancy. The topics to be discussed include:

- Social referencing
- Joint visual attention
- Developmental changes in emotion perception in infancy
- Enduring effects of emotional communication in infancy and toddlerhood
- Emotion authenticity and inauthenticity in mother-infant interaction
- Role of cognitive factors in emotional communication.

Evaluation will be based on seminar participation. There is no final examination envisioned.

Ψ 290J

Designing Courses and Course Syllabi to Enhance Motivation

Professor Martin Covington

CCN: 75120

This Fall, 2010, the GSI Teaching and Resource Center, in collaboration with Professor Martin Covington, Professor of Psychology and Presidential Chair in Undergraduate Education, will offer a semester-long program entitled "Designing Courses and Course Syllabi to Enhance Student Motivation."

The goal of this program is two-fold: 1) to enable graduate students from any discipline to develop a syllabus step-by-step over the course of the semester and 2) to integrate knowledge of what promotes student motivation and learning into course design. In addition to assisting graduate students in the short run by guiding them through the process of syllabus and course design, this program will enable graduate students to develop skills that will be of benefit to them in the academic job search and in future academic careers.

The program will take place from 3-5:00 pm every OTHER Monday, starting August 30, 2010. The organizational meeting (August 30th) will take place in 3105 (Beach Room) Tolman Hall. All subsequent meetings will be held in 321 Haviland Hall.

Students who participate in the program may receive credit for their work by enrolling in Psychology 290I with Professor Covington. Graduate students who attend all sessions and complete the program will be acknowledged by a letter of recommendation.

To enroll in this program, please send an e-mail message to gsi@berkeley.edu. Please note that space is limited.

Ψ 290J**Culture and Social Cognition****Professor Kaiping Peng****CCN: 75126**

This course will deal with issues in social cognition from a cultural psychological perspective. We will discuss relationships between culture and some popular topics in social psychology. The basic topics we are going to cover in this semester are: culture and self (dialectical self knowledge, self verification, subjective well-being), culture and emotions, culture and human relations, culture and judgment (hypothesis testing, choice and regret, prediction, moral judgments), culture and reasoning (attribution, intentionality, responsibility, dialectical thinking, creative problem solving), identity effect (cultural identity and its consequences), and methodological issues of cross-cultural study (priming cultures, implicit measurement of cultures, validity of cross-cultural contrast).

Ψ 290J**Psychology of Creativity****Professor Charlan Nemeth****CCN: 75128**

This graduate seminar will focus on the Psychology of Creativity and will be coordinated with the lecture course of the same name. Graduate students will attend many of the lectures of the course (without the examinations) but, each week, will have an additional hour for discussion. We will mainly concentrate on the interface between creativity and related fields. Examples include scientific creativity, quality of decision making, organizational cultures, creativity in everyday life etc. Graduate students will be expected to present and write one paper (max 15 pgs) exploring one of these links to creativity.

Lectures Tues 2-4, Tolman 5101

Graduate student discussion (1 hr/week): To be determined based on student schedules.

Ψ 290Q**The Cognitive Science of Supernatural Beliefs****Professor Tania Lombrozo****CCN: 75132**

Course description: Why do so many people hold supernatural beliefs, and why do those beliefs have the characteristics they do? In this seminar, we'll consider recent advances in the cognitive science of religion concerning the nature and basis for supernatural beliefs. In particular, we'll consider how basic cognitive processes contribute to such beliefs, drawing on research in cognitive development, cognitive psychology, and cognitive anthropology. Students will be expected to participate in weekly discussions, to lead discussion once or more throughout the semester, and to complete a final paper. (Note that this course is taught jointly with Psych 128. Graduate students should enroll in Psych 290Q, and attend the first portion of the three-hour block for 128, as well as an additional graduate section, to be scheduled based on students' availability.)

Ψ 290Q**Computational Models of Cognition****Professor Tom Griffiths****CCN: 75135**

The objective of this course is to provide advanced students in cognitive science and computer science with the skills to develop computational models of human cognition. Computational modeling is one of the central methods in cognitive science research, and can help to provide insight into how people solve the challenging problems posed by everyday life, as well as how to bring computers closer to human performance for some of these problems. The course will explore three ways in which researchers have attempted to formalize cognition – symbolic approaches, neural networks, and probability and statistics – considering the strengths and weaknesses of each.

Ψ 290Q**Narrative, the Self, and Autobiographical Memory****Professor Eleanor Rosch****CCN: 75137**

There is a current interdisciplinary movement which views narrative as the core of the development and maintenance of "the self," the self-concept, and of autobiographical memory. This seminar will examine such issues from multiple perspectives. Topics include: the nature of narrative and techniques of narrative analysis; earliest development of the self narrative; culture, cognitive, and parental factors in the development of self narrative styles; self concept, self schemas and autobiographical memory, cross-cultural differences in self and in narrative; clinical implications of the narrative view; and literary versus psychological approaches to the self and memory. Students will gain experience in collecting and analyzing one or more narratives and will have a chance to present and discuss these in class.

Readings: a Reader available from Copy Central on Bancroft.

Ψ 292**Introduction to the Profession of Psychology****TBA****CCN: 75144**

This is a required 2-unit course for (and restricted to) all first-year students in the graduate program in Psychology. Several weeks of professional and ethical issues in the field, followed by guest lectures from various faculty members in the department, emphasizing historical trends in the field and current research programs.

Ψ 300**Teaching Psychology****Professor Rodolfo Mendoza-Denton****CCN: 75390**

Course Format: Two hours of seminar per week.

Credit option: Course may be repeated for credit.

Grading option: Must be taken on a *satisfactory/unsatisfactory* basis.

Description: This course will provide training in a variety of teaching techniques, will review relevant pedagogical issues, and will assist graduate students in mastering their initial teaching experiences.

Ψ 301

Supervision for Teaching Psychology 2

Professor Rodolfo Mendoza-Denton

CCN: Please contact the instructor for enrollment information.

Course Format: Two hours of seminar per week.

Prerequisites: 300, advancement to candidacy, and consent of instructor.

Credit option: Course may be repeated for credit.

Grading option: Must be taken on a *satisfactory/unsatisfactory* basis.

Description: Supervised teaching experience for graduate student instructors of Psychology 2.