**BIEB 167: Animal Behavior & Communication Lab
Course Information
Winter Quarter 2013**

Course philosophy
This is one of your last UCSD courses and therefore provides you with an opportunity to apply all that you have learned to real animal behavior and field research. For these reasons, I am teaching the course with a heavy emphasis on practical experimentation, not only on lab exercises. Your success therefore depends upon your commitment to go beyond lab book exercises and engage in real research.

Grading
- Course participation = 10%
- Midterm lab practical exam = 20%
- Lab reports (3)= 40% total
    - Lab report 1 = 10%
    - Lab report 2 = 10%
    - Lab report 3 = 20%
- Final exam = 30%
- Grades are assigned on a fixed percentage, not a curve. The grades are assigned as follows. Each percentage shown is the **lowest** percentage corresponding to a letter grade. For example, any percentage that is greater than or equal to 80% and lower than 83.3% corresponds to a B+.

> Less than 60%=F
> 60%=D-
> 63.3%=D
> 66.3%=D+
> 70.0%=C-
> 73.3%=C
> 76.3%=C+
> 80.0%=B-
> 83.3%=B
> 86.3%=B+
> 90.0%=A-
> 93.3%=A
> Greater than 96.3%=A+

How does my improvement affect my grade?
The weighting system that I use gives the final exam more weight than the midterm and the final lab report more weight than the first two lab reports. Thus, you are automatically rewarded if you do better. In addition, I look at all the grades to see if you also exhibited steady **PERCENTAGE** improvement on the exams. Thus, if you scored 50%, 60%, and 70% respectively on each successive exam, I will increase your grade to reflect this improvement. **HOWEVER**, this is based upon **PERCENTAGE** improvement, not on your raw points.

Readings
Readings will be posted as "e- reserves" on the website (where they may be read for free).
NOTE: e-reserves can generally only be accessed on campus unless you can setup a proxy server. Please see instructions online.

Exams
To evaluate your progress in the course and to insure that you have a firm grasp of the concepts necessary for the implementation and analysis of the final course project, there will be **midterm lab practical exam (involving a written exam and a computer test)** in which you will be asked to demonstrate your ability to use the different software packages and your familiarity with concepts being covered in the course. The final exam will be a written exam that covers the concepts covered in the course.

Lab Reports
Students will work in groups. There are three labs in the course. *For the first two labs*, each group will write a lab report and *the grade for all members of the group will be the same and be based on the group lab report.* For the final lab (flamingos or primates), *each student will turn in a separate lab report*, although groups will work jointly on the labs. For this final lab, you will be graded individually. All lab reports must be **concise**. The text will be written as a scientific paper. Details about the grading of the reports will provided. We understand that group work can be subject to inequalities in the efforts of different individuals within the group. For this reason, only 20% of your grade results from group work (the two shared lab reports).

Regrades
If an error has been made in the grading of your exams, you may submit it to the instructor within *one week* of exam distribution for a regrade. The cut-off date for final exam regrades will be announced later in the quarter. **Your midterm or final exam must first be submitted to the instructor or TA with a written description of the grading error**. Regrade requests will not be processed without a written description of the grading error. **No regrades will be given for exams written in non-permanent ink.**

Missed exams & Excused absences
There are no make-up exams. If you miss the midterm, you will be required to provide official documentation of an unavoidable emergency (e.g. serious illness, etc.) or an excused absence such as a note from your coach for a sporting event. Without such documentation, you will receive a failing grade for the midterm (0%). With valid documentation, the proportion of your grade that is based upon your final exam will be increased to cover the midterm that was missed. Thus the final exam will then count for 60% of your grade, instead of 40%. A missed final exam cannot be taken at a later date. If you are able to provide official documentation of an unavoidable emergency, you will receive an incomplete for the course. You will then need to make arrangements to complete the course in the following quarter. **No exam can be taken before or after the scheduled exam date.**

Academic Misconduct Policy
Students are expected to do their own work, as outlined in the UCSD Policy on Academic Integrity. **Academic misconduct** is broadly defined as any prohibited or dishonest means to receive course credit, a higher grade, or avoid a lower grade. Academic misconduct misrepresents your knowledge and abilities, which undermines the instructor's ability to determine how well you're doing in the course. Such cheating will not be tolerated, and I will fail any student caught engaging in academic dishonesty and report the case to the UCSD Academic Integrity Review Board. Punishment for cheating is severe, including possible suspension. Please do not risk your future by engaging in cheating. All exams will be closed book and closed-notes, so all personal materials must be stowed under your seat. Only exams written in non-erasable pen will be considered for regrades. Because both exams are required for satisfactory completion of this course, any student caught cheating on an exam will receive a failing grade for the course.

TED

The course will be using web learning software called "TED". Your USERID and Password for your UCSD email account should work. If you experience problems accessing WebCT, please contact Academic Computer Support. **PLEASE CHECK THIS WEBSITE FREQUENTLY!** Virtually of the course information is available through this website. All of the **READINGS** (with the exception of the required textbook) are available through this site and can be downloaded as PDF files or viewed directly on the web. **GRADES** are also available on the website.

Podcasting

Unfortunately, the room that we are using for the lectures and labs is not equipped for podcasting.

Lab Time

Lab time is a valuable resource, and you should try to maximize your productivity during these periods. It is far easier to work on a project during lab time when the instructor and TA are available for questions than to wait and finish it on your own time.

Group Presentations

The last class will be dedicated to group presentations. Each group will prepare a 10-minute PowerPoint presentation in which they present their final project. We will allow 10 minutes for each presentation and 5 minutes for questions. Each presentation should consist of the following:

1) **Title**
2) **Introduction**. What is the background of your research question? Why did you conduct this project?
3) **Materials and methods**. How did you collect your data? What did you have to change or modify?
4) **Results**. Use proper statistical techniques to describe your data.
5) **Conclusions**
6) **Future directions**. What would you do next given what you have learned?

BIEB 167 Syllabus
Animal Behavior & Communication Lab
Please note: **information in this syllabus will change**. Several labs depend upon weather conditions and animal cooperation, and thus parts of the course may be reshuffled to account for changing conditions. Any schedule changes will be posted on the website. Make sure to frequently check the website to keep updated about the weekly readings, assignments, and exam schedule.

READINGS
All readings will be on the "course readings" section of the website

CONTACT INFORMATION & OFFICE HOURS
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TA office hours and contact information will be announced in class and on WebCT

Introduction & Basic Analysis tools
Jan 8   **Lecture 1**: **Introduction**
               Lab 1: Statistical review

Jan 10   **Lecture 2: Acoustic communication & Fourier analysis**
               Lab 2.1: Sound digitization
               Lab 2.2: Sound spectral analysis
               Reading: Chapter 3, Principles of Animal Communication

Jan 15   **Lecture 3: Fourier analysis II**
               Lab 3: Sound spectrogram analysis
               Reading: Sound Analysis I and Sound Analysis II (in WebCT readings folder)

Bowerbird lab
Jan 17   **Lecture 4: Signal ritualization: Bowerbirds I**
               Lab 4: Bowerbird sound analysis I
               Reading: Bowerbirds: Frith et al. 1996

Jan 22   **Lecture 5: Optimal acoustic signal design: Bowerbirds II**
               Lab 5: Bowerbird sound analysis II
               Reading: Bowerbirds: Diamond 1985

Honeybee lab
Jan 24   **Lecture 6**: **Honey bee referential communication (part 1)**
               Lab 6: Video analysis training
               Lab 7: Honeybee lab I
               Reading: Honey bee papers: Dyer review
Jan 29   **Lecture 7: Honey bee referential communication (part 2)**
               Bowerbird lab due at the beginning of class
               Lab 8: Honeybee lab II

Reading: Honey bee papers: Seeley tuned error hypothesis

Jan 31   **Lecture 8: Behavioral video analysis**
              Lab 9: Honeybee lab III

Feb 5   **Lecture 9: Coding**
              Lab 10: Honeybee data analysis I

Feb 7   **Lecture 10: Experimental design**
              Lab 11: Honeybee data analysis II

Feb 12   **LAB PRACTICAL MIDTERM! (during class)**

Feb 14   **Honeybee lab due at the beginning of class**
              No lecture. Meet at the San Diego Zoo **(depending upon weather)**
              Field Lab 12: Behavioral observations (ethogram) & defining questions

Feb 19   **Lecture 11: Social integration**
              Field Lab 13: Experimental design

Feb 21   **No lecture**. Meet at the San Diego Zoo **(depending upon weather)**
              Field Lab 14: Behavioral recording I

Feb 26   **Lecture 12: Signal design I**
              Field Lab 15: Behavioral recording II

Feb 28   **No lecture**. Meet at the San Diego Zoo **(depending upon weather)**
              Field Lab 16: Behavioral recording III

March 5   **Lecture 13: Signal design II**
              Field Lab 17: Project data analysis

March 7   **Lecture 14: Signal evolution**
              Field Lab 18: Project data analysis

March 12   **Lecture 15: Final exam review**
              Lab 19: Project write-ups

March 14   **Final paper due at the beginning of class**
              Student presentations

              Final exam! Location & Time _____