

BIEB 166 Syllabus Spring 2022

Animal Behavior & Communication

Please note: this syllabus is subject to change, particularly because of Covid-19. Any schedule changes will be posted on the course website. Make sure to frequently check the website to keep updated.

The course will be taught remotely until at least Jan 17, 2022, as required by UCSD policies. When being taught remotely, all lectures will be given via Zoom. Please see the Canvas course website for more details and Zoom links. All sections and office hours will also be via Zoom. All exams and quizzes will be via Canvas.

Once UCSD considers it safe to return to in person learning, we will have in person lectures. However, the course will still be subject to UCSD Return to Learn policies (<https://returntolearn.ucsd.edu>), and could pivot to online learning if required. Please make sure that you check out this website for resources on how to learn remotely: <https://digitallearning.ucsd.edu/learners/learning-remote.html>

Overall Learning Goals

I am excited that you will be learning about the fascinating field of Animal Behavior and Communication. The course is somewhat unusual in that it is a synthesis of traditional topics in Animal Behavior with a strong emphasis on mechanism and biophysics. I have the following learning goals for you.

- 1) One of my goals is to encourage interaction and engagement.**
- 2) Understand some of the amazing ways in which animal behavior and communication has evolved.
- 3) Learn how to analyze questions on multiple levels, on both the proximate (here and now) and ultimate (evolutionary) levels.
- 4) Be able to look at an animal behavior that you encounter, not only the ones that we discuss in this course, but any animal behavior, and form hypotheses and experiments as a scientist would. Why is the animal doing this? How can I answer my question? What are the appropriate control experiments?
- 5) Understand the constraints that shape animal communication in the acoustic, visual, and olfactory domains.
- 6) Years from now, I hope that you will retain an appreciation of the excitement and concepts that have arisen in the quest to understand the amazing behavior of animals. Above all, I hope that this course will expand your own horizons, giving you a sense of what it is like to live in different sensory worlds, and an admiration of the solutions that evolution has tailored.

Grading

Grading is on a fixed percentage scale, not on a curve. Grading on a curve forces you to compete with your classmates. I believe you should be rewarded for your own achievements, not upon how many people have lower or higher grades. In addition, grading with a fixed percentage allows you to have performance criteria that are specific, explicit, and clear. Each percentage shown is the **lowest** percentage corresponding to a letter grade. Please note that I use two significant digits.

I understand this is a challenging time and that you may have challenges with accessing the course material and perhaps taking the quizzes and exams online. My goals are to teach you the course material, fairly test your knowledge of this material, and grade you accordingly, while keeping these challenges in mind.

A+	≥96.66%
A	93.33%
A-	90.00%
B+	86.66%
B	83.33%
B-	80.00%
C+	76.66%
C	73.33%
C-	70.00%
D	<70.00% is a D (there is no D+ or D-)
F	<60.00% is an F

Your final grade is based upon the following:

- 1) First midterm exam = 20%
- 2) Second midterm exam = 30%
- 3) Final exam = 40%
- 4) Quizzes = 10%

To determine your overall grade to date, please use the following formula:

Total percentage = [(% from Midterm 1) x 0.20] + [(% from Midterm 2) x 0.30] + [(% from Final) x 0.40] + (% from quizzes) x 0.10

What does this formula mean? It weighs each exam by the percentage of your total grade that the exam is worth. Midterm 1 is worth 20%, Midterm 2 is worth 30%, and the Final is worth 40% of your grade. The quizzes count for 10% of your grade and are based upon your highest seven quiz grades (out of nine quizzes).

How does my improvement affect my grade?

The weighting system that I use gives each successive exam more weight. Thus, you are automatically rewarded if you do better in each successive exam. Sometimes, students are initially not familiar with how to best study for the course. Therefore, they may not do well on the first exam. However, they can compensate for this by improving their performance on successive exams.

In addition, the weights reflect the difficulty of the material covered in each exam. Midterm 1 covers 9 lectures. Midterm 2 covers 9 lectures (but in material that is more technical and that students typically find more challenging), and the Final Exam covers all lectures.

Due to pandemic restrictions and remote learning challenges, I will calculate your overall grade two ways and give you the higher grade. I will first use the original method described above that counts both midterms and the final. The second way will involve dropping your lowest midterm (defined as the one for which you earned the lowest percentage of points) when calculating your grade. The remaining midterm will be worth 40% of your grade and the final will be worth 50% of your grade. I cannot drop your final exam because it is cumulative, and this course, as approved by the UCSD Academic Senate, must have a final exam. In both grade calculations, the quizzes will account for 10% of your grade. A principle of this recalculation is to ensure that no one assessment completely dominates your grade.

Accommodations

Students requesting accommodations and services due to a disability for this course need to provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD), prior to eligibility for requests. Receipt of AFAs in advance is necessary for appropriate planning for the provision of reasonable accommodations. ***Please note that I am unable to provide any accommodations unless they are first authorized by OSD.*** For more information, contact the OSD at (858) 534-4382 (voice), osd@ucsd.edu, or visit osd.ucsd.edu.

ALL EXAMS AND QUIZZES ARE GIVEN ONLINE. For Midterms 1 & 2, you have 50 min to complete the exam online within a 48-hour window. For the Final Exam, you have 3 hours to complete the exam online within a 48-hour window. For the weekly quizzes, you have one quiz per week and it needs to be completed within a 7-day window (but you can retake the quiz, though each time you will get a different question). The instructor and IAs will be available via Zoom online during the regularly scheduled course time to answer questions for the Midterms and the Final Exam. **At other times**, they will be available within normal working hours (8 am to 5 pm, Pacific Standard Time) to answer emailed questions or questions submitted through Canvas about these exams. ***We recommend that you take the exams at the regularly scheduled times to have access to the most immediate help.***

Each week will have a short online quiz. You can only take each quiz once. **Your highest 7 out of 9 online quiz scores will be used to calculate your online quiz grade.**

Answers to quizzes and exam will only be released after the period available for taking a particular quiz or exam has passed. For example, you can take your weekly quiz at any time between Monday and Friday of that week. The answers will be released on Saturday, and you just need to login to Canvas to check to quiz to see your answer, the correct answer, and your grade/point total.

Exam Regrades

Having your exam accurately and correctly graded **is important to us.** Thus, you may request that your exam be regraded **within one week** after the exam is made available. The regrade due date will be posted on the course software. **You must follow the following rules to submit a regrade.** These rules apply to **all exams**, including the final exam.

- 1) For **incorrect points addition**, please state in writing (email) which questions were incorrectly added up. Make sure you double-check this against the online key. In the past, students have actually lost points because they were incorrectly given too many points originally. **We therefore encourage you to double check the points addition on your exams.**
- 2) You must state in **writing** (email) exactly which questions you want regraded and why. **We usually will only regrade questions that you ask to be regraded (but see below).** Stating “the question was not graded correctly” **is not sufficient.** You must explain in **writing** why you feel you **deserve** more points. Please note that writing down a vague or general answer or writing down a series of correct and incorrect answers does not mean that the question was answered correctly. Just because there is a hint of a correct answer embedded among incorrect answers does not mean that you correctly understood the concept being tested.
- 3) **YOU CAN LOSE POINTS ON A REGRADE.** We do not want to penalize you for submitting a regrade, but the logic of a regrade is to make sure that the regraded questions are **accurately** and **correctly** regraded. We will only regrade questions that you submit to be regraded, but these questions will be correctly regraded. Students have lost points in the past. To guard against this, please check the key carefully and make sure that you have a clear understanding of the correct answer
- 4) If it appears to the instructor that a student is submitting an exam for a **frivolous regrade** (defined as more than 66% of the questions to be regraded not deserving additional points), then the instructor may have the entire exam regraded.

Missed exams

There are no make-up exams. If you must miss an exam (outside of the scheduled exam window), please let us know why. For example, you may have missed an exam because of illness. Once the exam key has been released to students, you can no longer take that exam. The proportion of your grade **that is based upon your final exam** will then be increased to cover the midterm that was missed. You must contact the instructor with this information within one week after you return to health and resume the course. **If you missed your final exam and are able to meet the requirements of the UCSD incomplete policy, you may receive an incomplete.** You will then need to make arrangements to complete the course in the following quarter.

Incomplete policy

If you receive an incomplete, you must schedule your make up final exam ***before the end of the following quarter.*** *Once you and the instructor have agreed upon a final exam make-up date, you must take the make-up final. If you do not, you will have no further opportunities to take the make-up exam.*

Course Time Conflicts

You **should not** enroll in this course and course(s) that meet at the same day and time. If you do so, you will have a final exam time and date conflict and you will be unable to attend all the lectures. I realize that the situation is now somewhat different given online lecture delivery and saved videos of these lectures, but I would like to encourage live, active participation in the course, and this will be difficult if you take another course scheduled at the same times. You are only able to take the final exam for BIEB 166 at the date and time determined by the registrar. If a conflict arises, you will not be able to take the exam for BIEB 166.

If you have multiple final exams on the same day as the final exam for this course, you will not be able to take your final exam at a different day or time. There is an **incorrect belief** that an instructor **must** provide an alternative exam time if a student has three or more final exams on the same day. **This is not true.** Please be responsible in scheduling your courses to ensure that such situations do not arise.

What you need to buy

You do not need to buy any books or course readers for this course! All of the assigned readings, lecture notes, and lecture slides are available online for you to read and download on the course website. We have included **additional readings that are not required**, but are for your own enrichment. All lecture notes, lectures slides, and lecture movies can be accessed from home, if you have the correct software and setup **a VPN client**. Please check the campus website for current instructions. If you cannot access these materials, please use a campus computer.

Sourcebook

The course sourcebook is available as a pdf file online (download from the course website).

Please note that there is no need to buy old exams. *All exams that have ever been given in this course (with J. Nieh as instructor)*, and the corresponding answer keys, are on the course website.

Additional weekly readings

These readings are papers published in scientific journals and are designed to expose you to scientific literature and the scientific method. The readings are also assigned to give you a deeper example of a particular topic. **Required readings will be discussed in section and tested on the exam and are listed on the lecture schedule (see end of this document).** **You will be tested on the readings!** Sections will go over the weekly readings. Please attend the sections or office hours if you have any questions about the readings.

SECTIONS

Sections are OPTIONAL. Sections will review material presented in the lecture and any additional weekly readings that have been assigned. However, we strongly encourage you to attend.

What if I have a section on Monday that is also a holiday? You should then attend the online section rescheduled by your IA and, if you cannot attend this new time, you should go to another IA's section (see above).

The instructional assistants will also have office hours (one hour per section taught) with extra office hours before the exams. **There will be no sections during the first week of the course.** **We prefer that you attend the section you signed up for** but, if necessary, you can switch sections or attend a different one if you are unable to attend your regularly scheduled section.

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 and 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 cheating.

The course website

The course will be using web-learning software called “Canvas”. Your USERID and Password for your UCSD email account should work. However, if you are a recent transfer student or do not yet have a UCSD email account, please contact ITS (<https://students.ucsd.edu/campus-services/technology/help.html>). **PLEASE CHECK THE COURSE WEBSITE FREQUENTLY!** All of the **READINGS** are available through this site and can be downloaded as PDF files or viewed directly on the web. **Exam keys** and **grades** are also on the website. As a backup, all course material is also available on our official UCSD Google Drive site. The link to this backup site will be directly emailed to you and is also available from the IAs.

Zoom security

We take your safety and security very seriously. In the past, there have been cases of zoom bombing in which students and instructors have been verbally and visually attacked in ways that are a clear violation of our UCSD Principles of Community and our commitment to Equity, Diversity, and Inclusion. Therefore, Zoom meetings will be encrypted (Advanced Encryption Standard 256 bits) and password protected. You need to be authenticated via Zoom to join (please login into Zoom before the meeting). All participants will join via a waiting room. Once all participants are in the meeting, the room will be locked and no one else will be allowed to enter. If you leave the meeting, you will need to first email the host to rejoin. Permission must be obtained from the meeting host to transfer files or share your screen. Once you have joined the meeting, you will not be able to change your name. You will also not be able to show your image, just initials. Thank you for understanding and helping to secure our meeting.

Podcasting

All lectures and reviews are video podcast and available in Canvas You can listen and view them using your Internet browser or download them for later access. I have enabled computer generated captioning for these videos since it may be somewhat helpful. However, please note that this has multiple computer generated errors. You can turn the captions **off** when viewing the videos. ***Please note that only the material that is written in the lecture notes and readings and that is spoken by the instructor during the lectures is accurate, and you will only be tested on this material.***

All class meetings will be video and audio recorded and available on the Canvas website. All sections will similarly be video and audio recorded (if the section room is equipped for this) and posted on Canvas. At least one of the sections will so recorded and available.

Movies (online video)

All movies shown in the course, with the exception of some short visual examples illustrating sound effects, are available online as Quicktime video files that you can download. **Not all videos on this website may be shown, so please check lectures to see what was actually presented. It is best to view the videos in the context of the lecture podcast since if you**

view the videos out of context, it will be more difficult to understand the concept(s) being illustrated. Please note that viewing movies online (or, indeed, just watching the lecture video podcasts) is not a substitute for attending class because you are able to ask questions and benefit from the classroom setting.

EDI & PRINCIPLES OF COMMUNITY

Diversity and equity statement

It is important for us to make sure that how we teach this course and how we accommodate different student needs reflects the differences of race, ability, sexual orientation, age, and gender identity that enrich our classroom experience and campus. If you have any concerns related to diversity and equity in the course, please contact the instructor.

UC San Diego Principles of Community (<https://ucsd.edu/about/principles.html>)

As we continue to confront the senseless killings of Breonna Taylor, Ahmaud Arbery, George Floyd and many others, we would like to remind everyone of UC San Diego's Principles of Community. Our campus consists of diverse communities, and we acknowledge that our society carries biases based upon race, ethnicity, sex, gender, and multiple other dimensions. We reject acts of discrimination based on race, ethnicity, sex, gender identity, age, disability, sexual orientation, religion, and political beliefs and will confront and appropriately respond to such acts. We also affirm the right to freedom of expression and promote the open expression of our individuality and diversity within the bounds of respect, courtesy, confidentiality, and sensitivity. Above all, we are committed to the highest standards of civility and decency for everyone because we are supporting and promoting a community in which all people can work and learn together in an atmosphere free of demeaning or abusive treatment. If you have any concerns about what you have experienced in this course, please contact the instructor and/or consider using the resources given below.

Discrimination and harassment

The Office for the Prevention of Harassment & Discrimination (OPHD) aids students, faculty, and staff regarding reports of bias, harassment, and discrimination. OPHD is the UC San Diego Title IX office. Title IX of the Education Amendments of 1972 is the federal law that prohibits sex discrimination in educational institutions that are recipients of federal funds. Students have the right to an educational environment that is free from harassment and discrimination.

Students have options for reporting incidents of sexual violence and sexual harassment. Sexual violence includes sexual assault, dating violence, domestic violence, and stalking. Information about reporting options may be obtained at OPHD at 858-534-8298, ophd@ucsd.edu, or <http://ophd.ucsd.edu>. Students may receive confidential assistance at CARE at the Sexual Assault Resource Center at 858-534-5793, sarc@ucsd.edu, or <http://care.ucsd.edu>, or Counseling and Psychological Services (CAPS) at 858-534-3755 or <http://caps.ucsd.edu>.

Students may feel more comfortable discussing their particular concern with a trusted employee. This may be a student affairs staff member, a faculty member, a department chair, or other university official. These individuals have an obligation to report incidents of sexual violence and sexual harassment to OPHD. This does not necessarily mean that a formal complaint will be filed.

If you find yourself in an uncomfortable situation, ask for help. The university is committed to upholding policies regarding nondiscrimination, sexual violence, and sexual harassment.

**STUDENT RESOURCES
ACADEMIC SUPPORT**

Geisel Library	Research tools and eReserves
Content Tutoring with the Teaching + Learning Commons	Drop-in and online tutoring through the Academic Achievement Hub
Writing Hub Services in the Teaching + Learning Commons	Improve writing skills and connect with a peer writing mentor
Learning Strategies Tutoring	Address learning challenges with a metacognitive approach
OASIS	Intellectual and personal development support
Student Success Coaching Program	Peer mentor program that provides students with information, resources, and support in meeting their goals
Academic Integrity	Policy on Academic Integrity of Scholarship and strategies to excel with integrity
Technical Support	Assistance with accounts, network, and technical issues

STUDENT RESOURCES

Basic Needs	Provides access to food, housing, and financial resources
Counseling and Psychological Services (CAPS)	Provides services like confidential counseling and consultations for psychiatric services and mental health programming
Community Centers	As part of the Office of Equity, Diversity, and Inclusion the campus community centers provide programs and resources for students and contribute toward the evolution of a socially just campus
Office for Students with Disabilities	Documents student disabilities, provides accessibility resources, and reasonable

	accommodations
Triton Concern Line	Report students of concern at (858) 246-1111
Office of the Ombuds	The Office of the Ombuds provides a confidential, safe space for students, staff, and faculty to talk about concerns and problem-solve issues arising from interpersonal and group conflict.

DISCRIMINATION AND HARASSMENT

The University of California, in accordance with applicable federal and state laws and university policies, does not discriminate on the basis of race, color, national origin, religion, sex, gender, gender identity, gender expression, pregnancy (including pregnancy, childbirth, and medical conditions related to pregnancy or childbirth), physical or mental disability, medical condition, genetic information, ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (including membership, application for membership, performance of service, application for service, or obligation for service in the uniformed services). The university also prohibits harassment based on these protected categories, including sexual harassment, as well as sexual assault, domestic violence, dating violence, and stalking. The nondiscrimination policy covers admission, access, and treatment in university programs and activities.

If students have questions about student-related nondiscrimination policies or concerns about possible discrimination or harassment, they should contact the **Office for the Prevention of Harassment & Discrimination (OPHD)** at (858) 534-8298, <https://ophd.ucsd.edu/> , or <http://ophd.ucsd.edu/report-bias/index.html>

Campus policies provide for a prompt and effective response to student complaints. This response may include alternative resolution procedures or formal investigation. Students will be informed about complaint resolution options. A student who chooses not to report may still contact CARE at the Sexual Assault Resource Center for more information, emotional support, individual and group counseling, and/or assistance with obtaining a medical exam. For off-campus support services, a student may contact the Center for Community Solutions. Other confidential resources on campus include Counseling and Psychological Services, Office of the Ombuds, and Student Health Services.

CARE at the Sexual Assault Resource Center: 858.534.5793 | sarc@ucsd.edu | <https://care.ucsd.edu>

Counseling and Psychological Services (CAPS): 858.534.3755 | <https://caps.ucsd.edu>

CAMPUS SAFETY REQUIREMENTS AND EXPECTATIONS

Keeping our campus healthy takes all of us. You are expected to follow the [campus safety requirements](#) and pursue personal protection practices to protect yourself and the others around you. These include:

Participate in the university’s daily screening process.

Everyone must complete a [Daily Symptom Survey](#) to access a university-controlled facility.

Participate in the university's testing program.

All students are required to participate in the [COVID-19 Testing program](#) as required by their vaccination status:

- Unvaccinated students with approved exceptions must complete a COVID-19 test twice a week.
- Students who are fully vaccinated must complete a COVID-19 test once a week, for the first four weeks of the quarter.
-

Wear a well-fitted face covering that covers your nose and mouth at all times.

Everyone is required to [wear face coverings indoors](#) regardless of vaccination status. If you see someone not wearing a face covering or wearing it incorrectly, then kindly ask them to mask up.

Monitor the daily potential exposure report.

Every day the university will update the potential exposure report with building and some classroom information and the dates of exposure. Download the [CA COVID Notify app](#) to your phone to receive an alert if you have been potentially exposed to COVID-19.

Assist in the contact tracing process.

If you're contacted by a case investigator, it means you have been identified as [close contact](#), please respond promptly. You must assist with identifying other individuals who might have some degree of risk due to close contact with individuals who have been diagnosed with COVID-19.

Contact the instructional team if you are impacted by COVID-19

Please note that due to the ongoing COVID-19 Pandemic, changes may be made in response to new developments and information.

PRIVACY PRACTICES IN THIS COURSE

This course is a community built on trust; as a learning community, we are collectively responsible for upholding privacy protections. In order to create a community built on trust and the most effective learning experience, our interactions, discussions, and course activities must remain private and free from external intrusion. We have obligations to each other to preserve privacy and cultivate fearless inquiry. We respect the individual dignity of all and will refrain from actions that diminish others' ability to learn.

As your instructor, I am committed to protecting your privacy by only using university-approved course technologies and adhering to the Family Educational Rights and Privacy Act (FERPA) [link to your location's FERPA notice] and Campus Privacy Office guidelines. This includes using your educational data only as allowed by FERPA, for example, for legitimate educational purposes such as submitting your final grades to the registrar's office. Communications in this course are subject to the [UC Principles of Community](#) and the [Electronic Communications Policy](#).

Please note the following privacy practices for our course:

Course platform. This course uses Canvas, which collects information about your engagement with course materials. I will review this information periodically to ensure students are engaged and look for signs of students falling behind. I will also review this information in case of academic misconduct allegations, if relevant.

Online/video classes. Regarding video-conferencing, while I ask, to the extent you are comfortable and able, that you keep your videos on during lessons to aid in the development of our learning community, I also understand that may not always be possible. Know that you will not be penalized for choosing to disable your video during synchronous course sessions. You are welcome to use an appropriate virtual background if you do not want to have your surroundings visible. Be mindful of others who may not wish to be visible or recorded in the background.

You may use your name or a pseudonym on Zoom that complies with our Principles of Community (see above). Students with an official FERPA block on directory information with the registrar are not required to use their name or camera during online classes.

If I do record our class, I will give everyone notice prior to the recording, so that you may turn off your video should you not wish to be recorded.

Using learning materials. Course materials (videos, assignments, problem sets, etc.) are for use in this course only. You may not upload them to external sites, share with students outside of this course, or post them for public commentary without my written permission. We will not pin or take screenshots of fellow classmates or record sessions during synchronous online sessions or share discussion thread posts from the learning management system unless granted explicit permission to do so. Unauthorized sharing or uploading to exam questions, test answers, or summaries of exams is prohibited.

Using live class recordings. We are recording class meetings to support remote students and to provide everyone in the class with useful study aids. These recordings will be available for review through our learning management system. Students are prohibited from recording the class themselves unless a student has an approved academic accommodation for such recording. The university strictly prohibits anyone from duplicating, downloading, or sharing live class recordings with anyone outside of this course, for any reason.

Sharing student information. You may work on group projects with other students or be asked to review or respond to their work. Other materials and activities may provoke debate, argument, or spirited discussion; some of us may volunteer sensitive personal information. Do not share others' personal information, including class dialogue or performance, on sensitive topics outside of our course community. Student work, discussion posts, and all other forms of student information related to this course should be handled with respect and remain within interactions of this course. You may publicly post your own work, provided it does not violate academic dishonesty policies or show responses to assessments; public posting of group work requires consent from all group members. Research conducted as part of a class is subject to UC research policies and may include sensitive information. Students may not share research information without permission from the instructor.

Sharing course information with others. Do not post images or identifiable conversations that occur in class to social media or to those beyond our learning community. Sharing private information about our course community (including discussions, activities, presentations, student work, etc.) with others for the purpose of inviting external attention, intrusion, ridicule, or harassment is an egregious breach of trust. Violating these principles will be handled according to the [link to applicable academic honor code].

If you have concerns after reviewing these privacy practices, I invite you to reach out to the instructor.

BIEB 166 Syllabus

Animal Behavior & Communication

Please note: information in this syllabus is **SUBJECT TO CHANGE**. Any schedule changes will be posted on the course website and announced in lecture. Make sure to frequently check the website to keep updated.

READINGS

ALL READINGS ARE **REQUIRED**, UNLESS THEY ARE LABELED “**OPTIONAL**,” PLEASE CHECK WHAT IS LISTED FOR EACH LECTURE. We provide optional readings so that you can enrich your own understanding of these topics, if you choose.

- 1 Lecture readings:** These readings are available in the course book or you can download them from the course website.
- 2 PAC:** Bradbury J, and S.L. Vehrencamp (2011) Principles of Animal Communication, 2nd Edition, Sinauer Assoc., Inc., Sunderland, Mass. ***Please note that this 2nd edition is completely different from the 1st edition. YOU DO NOT NEED TO BUY THIS BOOK. THE CHAPTERS ARE AVAILABLE AS PDF FILES ON THE COURSE WEBSITE.***
- 3 PAB:** Dugatkin, L.A. (2009) Principles of Animal Behavior, 2nd Edition, W.W. Norton & Company, Inc., New York, NY. ***Please note that the readings from this book are suggested, not mandatory. Material that is ONLY found in this book and not in the required readings or discussed in lecture will not be tested. I have suggested readings because they supplement topics that we discuss in lecture and that are discussed in the readings that I have written. YOU DO NOT NEED TO BUY THIS BOOK. THE CHAPTERS ARE AVAILABLE AS PDF FILES ON THE COURSE WEBSITE.***
- 4 SELECTED RESEARCH PAPERS** (see weekly schedule).

YOU MAY BE APPROACHED TO BUY AN OLD COURSE READER. PLEASE NOTE THAT I CHANGE THE LECTURES AND OTHER MATERIALS EACH YEAR, SO IT IS BEST TO SIMPLY PRINT OUT WHAT IS AVAILABLE FOR FREE ON THE COURSE WEBSITE. THIS WILL BE UP TO DATE. IN THE PAST, STUDENTS WHO HAVE BOUGHT OLD READERS HAVE BEEN SOMETIMES BEEN DISAPPOINTED OR CONFUSED.

CONTACT INFORMATION & OFFICE HOURS

Instructor: James C. Nieh

Office hours are held online, see website

Office: 858 822-5010

Email: jnieh@ucsd.edu

Office Hours: Please see the course website site for details

IA section times and Office Hours

Please see the course website site for details

Review sections

The instructor, James Nieh, will give an online review section on the weekend (usually on Saturday) before a midterm exam. The review section will be posted and available online. Review sections are always **Question and Answer sessions** to which you should bring questions. The instructor will cover topics that students had difficulty with, but cannot cover everything.

NOTE: ALL READINGS ARE **REQUIRED**, UNLESS THEY ARE LABELED “**OPTIONAL**”

WEEK 1:

- Jan 3 Lecture 1: Course Overview & History of Ethology
Lecture 1 REQUIRED reading (see sourcebook or course website for these readings)
- Jan 5 Lecture 2: The four questions of Tinbergen: Classical Ethology part I
Lecture 2 REQUIRED reading
- Jan 7 Lecture 3: Classical Ethology part II
Lecture 3 REQUIRED reading

No section this week. We understand that you may need to change sections at some point, so please come and see the head IA about this and other section issues.

WEEK 2

- Jan 10 Lecture 4: Foundations of Behavioral Neurobiology.
Lecture 4 REQUIRED reading
Optional reading (NOT required, you will not be tested on it): PAB p90-98
PAB = Principles of Animal Behavior, available online
- Jan 12 Lecture 5: Behavioral Endocrinology.
Lecture 5 REQUIRED reading
Optional: PAB p81-90
- Jan 14 Lecture 6: Behavioral Genetics
Lecture 6 REQUIRED reading
Optional: PAB p146

REQUIRED Section reading:

Adkins-Regan (1998) Hormonal mechanisms of mate choice. American Zoologist, 38: 166-178.
This reading may be tested on the midterm. (If not, it will be tested on the final.) **Note: if you cannot attend the section for which you signed up, please attend whatever section you can make (see the course website for times and locations).**

WEEK 3

Jan 17 **No class, Martin Luther King Day**

Jan 19 Lecture 7: Genetics & Learning I
Lecture 7 REQUIRED reading
Optional: PAB p146

Jan 21 Lecture 8: Learning II
Lecture 8 REQUIRED reading
Optional: PAB p118-145

Sections:

Review for Midterm 1. No required reading this week.

WEEK 4

Jan 24 Lecture 9: Imprinting & Kin Recognition
Lecture 9 REQUIRED reading
Optional: PAB p208-210

Jan 26 **FIRST MIDTERM (covering lectures 1-9). The midterm will be taken online within a 48-hour window.**

Jan 28 Orientation: Kinesis & Taxis
Lecture 10 REQUIRED reading

Section Reading:

Capaldi, E.A., Robinson, G.E., and Fahrbach, S.E. (1999) Neuroethology of spatial learning: the birds and the bees. Annual Review of Psychology. 50:651-682. The reading is available online. Please note that some of the topics covered in this paper are relevant to week 4 lectures.

Review:

The instructor will also hold an additional review section over the weekend before the exam. Please see the course website for the time and place. Please bring questions!

WEEK 5

Jan 31 Lecture 11: Orientation: Migration Orientation Mechanisms
Lecture 11 REQUIRED reading
Optional: PAB p443-448

Feb 2 Lecture 12: Representational Communication
Lecture 12 REQUIRED reading

Feb 4 Lecture 13: Signal Origins & Evolution
Lecture 13 REQUIRED reading
Optional: PAB p400-405

REQUIRED Section Reading:

Cheney, D.L. and Seyfarth, R.M. (1985) Vervet monkey alarm calls: manipulation through shared information? 94: 150-166. The reading is available online. This reading may be tested on the midterm. (If not, it will be tested on the final.). In addition, you will review results of the first midterm and review problem areas.

WEEK 6

- Feb 7 Lecture 14: Properties of Sound
Beginning with this lecture, with the exception of lectures 19 and 25, there are no mandatory readings and there are no more lecturer-written readings. If you wish to learn more, there are OPTIONAL readings from the book Principles of Animal Communication (PAC: 2nd edition, available online) OPTIONAL PAC p19-33.
- Feb 9 Lecture 15: Fourier Analysis
OPTIONAL PAC (2nd edition, available online): p24-27.
- Feb 11 Lecture 16: Sound Production
OPTIONAL PAC (2nd edition, available online): p33-63.

Section:

Review lectures and discuss examples of sound analysis, *particularly focusing on interpreting Fourier spectrograms and spectrums*. **There is no assigned section reading this week** because I want you to focus your section time on the topic of understanding how to use Fourier analysis for understanding animal communication.

WEEK 7

- Feb 14 Lecture 17: Sound Propagation
OPTIONAL PAC (2nd edition, available online): p65-83.
- Feb 16 Lecture 18: Sound Reception
OPTIONAL PAC (2nd edition, available online): p83-111.
- Feb 18 Lecture 19: Whale Sound Communication

Section:

Review lectures and discuss examples of sound analysis, propagation, and reception. Focus on Fourier examples. **Prepare for Midterm 2.** You may notice that there is no special section reading assigned. This is because these topics are typically challenging and require more intensive discussion and review.

WEEK 8

- Feb 21 No class, President's Day
- Feb 23 **SECOND MIDTERM (covering lectures 10-19). Exam is 50 min online and needs to be completed within a 48-hour window.**
- Feb 25 Lecture 20: Properties of Light
OPTIONAL PAC (2nd edition, available online): p113-121.

Section:

Review lectures. No special section reading is assigned. The instructor will hold a review section over the weekend before the exam. Please check online for date and time!

WEEK 9

Feb 28 Lecture 21: Visual Signal Production
OPTIONAL PAC (2nd edition, available online): p121-151.

March 2 Lecture 22: Visual Signal Transmission & Reception I
OPTIONAL PAC (2nd edition, available online): p153-169

March 4 Lecture 23: Visual Signal Reception II.
OPTIONAL PAC (2nd edition, available online): p170-191.

Section:

Review second midterm results, discuss problem areas, and review light and vision. No special section reading is assigned.

WEEK 10

March 7 Lecture 24: Olfactory Signaling: Production & Transmission
OPTIONAL PAC (2nd edition, available online): p193-213

March 9 Lecture 25: Olfactory Signaling: Reception
OPTIONAL PAC (2nd edition, available online): p214-234.

March 11 Lecture 26: Course Summary
NO ASSIGNED READING FOR THIS LECTURE

Section:

Review olfaction and review for final exam. No special section reading is assigned.

The instructor will also give a special review section on the weekend before the final exam. Please bring questions and see the course website for the time and location of this review. Other IA's may also give reviews. Please see the course website for details.

FINAL EXAM: Available on Monday, March 14, 2022, beginning at 11:30 am. You have 3 h to complete the online exam within a 48-hour window.

Material from any lecture and from the required readings can be tested on the final exam. The final exam is a comprehensive exam, but **will emphasize material in Lectures 19-26 and material that you learned in Lectures 1-18 THAT YOU WERE NOT TESTED ON IN EITHER MIDTERM.** For example, if you were tested on a particular concept or example in Midterm 1, it is *less likely* that you will be tested on this same concept or example in the final exam. In addition, the final exam will test you on the assigned papers. If no questions were asked about a particular assigned paper on either midterm, then you will be asked about this paper or papers on the final exam.

Bedtime Reading

If you would like to learn more about certain topics, I recommend:

Alcock, J. 1988. *The Kookaburra's Song*. Tucson: University of Arizona Press.

Cronin, H. 1991. *The Ant and the Peacock*. Cambridge: Press Syndicate of the University of Cambridge.

Dethier, V. 1962. *To Know a Fly*. San Francisco: Holden-Day.

Diamond, J. 1992. *The Third Chimpanzee*. New York: Harper Collins.

- Evans, H.E. 1966. *Life on a Little Known Planet*. New York: E.P. Dutton & Co., Inc.
- Goodall, J. 1990. *Through a Window: My Thirty Years with the Chimpanzees of Gombe*. Boston: Houghton Mifflin.
- Grandin, T. 1995. *Thinking in Pictures*. New York: Vintage.
- Griffin, D. 2001 *Animal Minds*. Chicago: University of Chicago Press.
- Tinbergen, N. 1969. *Curious Naturalists*. New York: Anchor Books.
- Ryan, M. 1985. *The Tungara Frog*. Chicago: University of Chicago Press.
- von Frisch, K. 1967. *The Dance Language and Orientation of Bees*. Cambridge: Harvard University Press.
- Wilson, E.O. 1994. *Naturalist*. Washington, D.C.: Island Press.