Animal Physiology (BIOE 131)

We’re glad you’re here!

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Course Structure

- There will be TWO synchronous learning days on Zoom (Lecture link: 928 1869 0652), Mondays and Wednesdays from 9-12:30. These days will consist of a blend of traditional lecture, group activities, individual reflections/work time, review sessions, and of course, regular breaks! Any assignments we do in lecture will be due by the end of the day.
- You will have some assignments due on Fridays, as well, though there is no lecture.

We expect you to attend and engage in our synchronous learning days - this will be the most effective way to learn the material! However, if you are in a different time zone or feel you might struggle to make our synchronous learning days, please feel free to contact me at kdale@ucsc.edu.

Weekly Schedule Quick Reference

<table>
<thead>
<tr>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synchronous class, 9a-12:30p [Zoom]</td>
<td>Synchronous class, 9a-12:30 [Zoom]</td>
<td>Assignments due!</td>
</tr>
<tr>
<td>Kat’s Student Hours, 1-2p AND 4-5p [Zoom]</td>
<td>Emily’s Student Hours, 4-5p [Zoom]</td>
<td></td>
</tr>
<tr>
<td>131L, 1-3p (if applicable)</td>
<td>131L, 1-3p (if applicable)</td>
<td></td>
</tr>
</tbody>
</table>
Meet your teaching team!

Instructor:
Kat Dale (she/her)
kdale@ucsc.edu
(or message me through Canvas or Discord). I will respond to you within 24 hours!

Student Hour Times:
Mondays, 1-2p and 4-5p
Zoom ID: 973 3642 3485
(password: animalphys)
Or, set up another time with me!

Teaching Assistant:
Emily Nazario (she/her)
enazario@ucsc.edu
(or message me through Canvas or Discord).

Student Hour Times:
Wednesdays, 4-5p
Zoom ID: 961 7036 1614
(password: animalphys)
Or, set up another time with me!

Learning Goals

Animal physiology is the study of **how animals work**. In this course, we will learn about the structures and functions that allow animals to adapt and survive in different ecosystems around the world. We will incorporate principles of animal behavior, ecology, and evolution to understand the mechanisms that drive and influence different physiological adaptations.

In addition to the content we will cover, this course will **help you develop as a scientist**. Goals for the scientific skills you will learn and practice in this course include creating and interpreting graphs, working with others, responding to peer review, and presenting scientific information.

1. **Identify and explain** basic physiological processes that allow animals to survive in different habitats

2. **Apply** scientific method to studies of animal physiology by conceiving and designing an experimental approach for studying physiological processes

3. **Develop** strategies to improve critical evaluation of scientific literature

4. **Collaborate** with peers to communicate and share scientific ideas using appropriate scientific language

5. **Connect** basic physiological principles with other scientific fields (ecology, behavior, and morphology)
Course Resources

Primary electronic resources we will use throughout the course:

canvas
Canvas course site:
Announcements, class materials, quizzes, exams, assignments

ZOOM
Synchronous class ID: 928 1869 0652
(password: animalphys)

Discord - optional!
Additional space to ask questions, find study partners, or share Cool Stuff

There is NO required textbook!

How to be successful in Animal Physiology

Come to Student Hours!
Mondays 1-2p [Zoom]
Mondays 4-5p [Zoom]
Wednesday 4-5p [Zoom]

We can:
• Answer questions about content
• Provide you with links to class recordings
• Get to know you and your strengths!
• Connect you to others in our learning community
• Offer advice on future career steps

Come to synchronous class!
We will:
• Learn physiological concepts together
• Connect to others in our learning community
• Practice scientific skills, like experimental design and hypothesis building

Take notes! (also the best way to stay awake on Zoom)
Options:
• Pen-and-paper
• Sketchnoting
• Tablet
• Typing on a computer
• Writing on printed-out slides

Complete weekly assignments on time!
We designed these to:
• Check your learning and help you identify areas of growth
• Provide a low-stakes form of assessment
• Reinforce concepts that are found throughout the course
• Turning assignments in on time = timely feedback!
Community Guidelines

It is my intent that students from all backgrounds and with all perspectives feel included and are able to learn and achieve their goals in this course. The diversity that all students bring to this class is a resource, strength, and benefit to us all. It is my intent to bring to class materials and activities that embrace a diversity of perspectives, experiences, and positions. Your suggestions for making this learning community as inclusive as possible are encouraged and appreciated. Please let me know if you identify ways to improve the effectiveness of the course for you personally or for other students or student groups. If any of our class meetings conflict with your religious or cultural events, please let me know so that we can work together to make alternative arrangements.

While working with you to build this community, I ask all of us to:

- Share our unique experiences, values, and beliefs
- Be open to the views of others and honor the uniqueness of our colleagues
- Appreciate the opportunity that we have to learn from each other in this community
- Value each other’s opinions and communicate feedback in a respectful manner
- Keep confidential discussions that our community has of a personal (or professional) nature
- Use this opportunity together to discuss ways in which we can create an inclusive environment in this course and across the university community

Academic Integrity

Looking things up on the internet is easy and tempting to do during remote learning, especially when it seems like your grade (and future) are on the line.

I’m here to tell you: Grades are important, but learning the concepts and skills is more important, and will take you farther in graduate school or other future jobs.

We aim to clearly outline our expectations (for instance, when you are welcome to collaborate with others, use the internet, use your notes, etc.) so that you are never in doubt about what is academically acceptable. If you have questions, just ask! And if you find yourself considering breaching your academic integrity, please reach out to us about your worries. We will follow the same guidelines for ourselves: If we don’t know the answer to one of your questions, we’ll tell you, and we’ll provide a source later.

Excellent resources to support your academic integrity can be found on the UC Santa Cruz library webpage. These include guidelines for citing sources and understanding plagiarism.

Finally, you should keep in mind that as a member of the campus community, you are expected to demonstrate integrity in all of your academic endeavors and will be evaluated on your own merits. The consequences of cheating and academic dishonesty—including a formal discipline file, possible loss of future internship, scholarship, or employment opportunities, and denial of admission to graduate school—are simply not worth it. Consequences and process for academic misconduct appear here.
### Grading & Assignments

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam (n = 1)</td>
<td>You choose!</td>
</tr>
<tr>
<td>Final Project (n = 1): Assessing, Communicating, and Expanding on</td>
<td>Collectively, these assignments make up 40% of your grade. You choose the percent of each assignment, from 15-25%. The default percentage is 20% for both. Preference due by July 5 - submit on Canvas [link]</td>
</tr>
<tr>
<td>Quizzes (n = 4)</td>
<td>15%</td>
</tr>
<tr>
<td>Weekly reflections (n = 4)</td>
<td>15%</td>
</tr>
<tr>
<td>In-class assignments (ex. connection squares, mini research questions,</td>
<td>20%</td>
</tr>
<tr>
<td>worksheets, etc.)</td>
<td></td>
</tr>
<tr>
<td>Paper annotations (n = 2)</td>
<td>5%</td>
</tr>
<tr>
<td>Paper discussion board (n = 2)</td>
<td>5%</td>
</tr>
</tbody>
</table>

Total: 40%

**What does the exam look like?**
- Hosted on Canvas
- 48-hour window to start/finish, but not timed
- Open note, closed-friend
- Mix of short answer, fill-in-the-blank, longer response
- Focus on graph interpretation, hypothesis building, explaining concepts

**What do the quizzes look like?**
- Hosted on Canvas
- Open for 1 week (quizzes close by class on Monday)
- 3 attempts
- Multiple choice and short answer
- Try to complete these closed-note!

**What is the final project?**
You will choose a scientific paper on current physiological research. Then, you will choose three of the following tasks to complete (if working on your own) or all four tasks (if working in a group of 2-3):
- A short research proposal based on the paper
- Complete/thorough paper annotations
- A “connections square”
- A 5 minute “lightning talk” or poster
Policy on Late Work

We set the due dates in this course with two main goals. We aimed to:

1) Spread out your weekly workload, so that you never feel like “everything is due all at once”
2) Give the teaching team and your peers enough time to give you quality and timely feedback on your work

That being said, every assignment will be given a 24-hour grace period, because we understand that life is tough and unexpected time commitments come up. After the 24-hour grace period, 10% will be taken off for each day late.

I’m happy to work with you in the case of difficult or extenuating circumstances, for which we can set up an additional extension or alternative route of submission. Please reach out to one of us!

Accessibility

All synchronous sessions will be recorded, but you must ask us for the link (via email, Discord, Canvas, or in Student Hours).

➔ Why? It’s hard for us to connect with students over Zoom, when most of you are just black screens. We want to use your request as an opportunity to check in with you and help resolve any issues that are impeding your learning or your ability to come to class.

I will gladly work with you to ensure accessibility of all course materials. I am also happy to accept and honor accommodations letters from the Disability Resource Center (DRC)!

Course Schedule

Subject to change throughout the session depending on timing and student needs!

Key:

- Worksheets
- Quizzes/Surveys
- Reflections
- Mini projects
- Final project
- Exam

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Topics</th>
<th>Due BEFORE class</th>
<th>Due by the end of the day (11:59 pm)</th>
</tr>
</thead>
</table>
| 1    | June 21 (Monday) | Learning community introductions  
• What is physiology? How do we study it?  
• How to read a scientific paper  
• Scaling | Syllabus annotation (via Hypothesis)  
• Getting to Know You survey | Scaling worksheet |
<p>|      | June 23 (Wednesday) | Energetics | | Find a Group survey (optional) |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Time</th>
<th>Class</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 25</td>
<td>Friday</td>
<td>8:00</td>
<td>NO LECTURE</td>
<td>Reflection #1, Fill out Final Project survey (paper of choice, %, and group members)</td>
</tr>
<tr>
<td>June 28</td>
<td>Monday</td>
<td>8:00</td>
<td>Digestion</td>
<td>Quiz #1, Mini research question</td>
</tr>
<tr>
<td>June 30</td>
<td>Wednesday</td>
<td>8:00</td>
<td>Thermoregulation</td>
<td>Read Guillermo-Ferreira &amp; Gorb (2021)</td>
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<td>o Post on Canvas discussion board</td>
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<td></td>
<td></td>
<td></td>
<td>o Submit annotations</td>
</tr>
<tr>
<td>July 2</td>
<td>Friday</td>
<td>8:00</td>
<td>NO LECTURE</td>
<td>Reflection #2, Submit one section of final project for peer review</td>
</tr>
<tr>
<td>July 5</td>
<td>Monday</td>
<td>8:00</td>
<td>ASYNCHRONOUS CLASS</td>
<td>Quiz #2/midpoint survey, Submit sliding scale percentage preference for exam and final project</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Osmoregulation</td>
<td>Read Strobel (2018)</td>
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<td>o Post on Canvas discussion board</td>
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<td></td>
<td></td>
<td>o Submit annotations</td>
</tr>
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<td></td>
<td></td>
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<td></td>
<td>Submit peer review</td>
</tr>
<tr>
<td>July 7</td>
<td>Wednesday</td>
<td>8:00</td>
<td>Sensory systems</td>
<td>Connections square</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Read Strobel (2018)</td>
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<tr>
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<td></td>
<td></td>
<td>o Post on Canvas discussion board</td>
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<td></td>
<td>o Submit annotations</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Submit peer review</td>
</tr>
<tr>
<td>July 9</td>
<td>Friday</td>
<td>8:00</td>
<td>NO LECTURE</td>
<td>Reflection #3, Submit one section of final project for instructor review</td>
</tr>
<tr>
<td>July 12</td>
<td>Monday</td>
<td>8:00</td>
<td>Muscular systems</td>
<td>Quiz #3</td>
</tr>
<tr>
<td>July 14</td>
<td>Wednesday</td>
<td>8:00</td>
<td>Circulatory systems</td>
<td>Group study guide - discussion board post</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Circulatory worksheet</td>
</tr>
<tr>
<td>July 16</td>
<td>Friday</td>
<td>8:00</td>
<td>NO LECTURE</td>
<td>Reflection #4, Submit final project (except for poster/presentation)</td>
</tr>
<tr>
<td>July 19</td>
<td>Monday</td>
<td>8:00</td>
<td>Diving Physiology (guest lecture by Luis Huckstadt), Respiration</td>
<td>Quiz #4, Exam question - discussion board post</td>
</tr>
</tbody>
</table>
We would like to acknowledge that the land on which UCSC is located is the traditional and unceded territory of the Uypi Tribe of the Awaswas Nation. Today these lands are represented by the Amah Mutsun Tribal Band who are the descendants of the Awaswas and Mutsun Nations whose ancestors were taken to Mission Santa Cruz and Mission San Juan Bautista during Spanish colonization of the Central Coast. Today the Amah Mutsun are working hard to fulfill their obligation to steward the Earth and all living things through relearning efforts and the Amah Mutsun Land Trust.

| July 21 (Wednesday) | • Survival physiology & species conservation *(not on final exam)*  
• Final presentations/poster session | • Submit poster/presentation (if applicable) | • Reflection #5  
• Exam opens at 12:30p |
| July 23 (Friday) | Pathways After Graduation Q&A session  
*Optional. Submit questions about postgrad opportunities, applying for jobs, getting involved with undergraduate research, etc.* | | Exam closes at 12:30p |