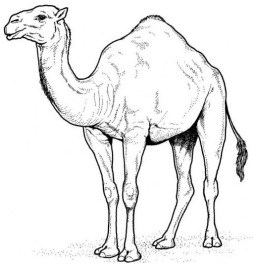

BIOSC 1435/2435

Environmental Physiology of Animals
Spring Term 2022 Syllabus

Faculty

Dr. Kevin Kohl
Pronouns: he/him
Office: 403 Clapp Hall
Email: kkohl@pitt.edu

Lecture Time

Tu/Th; 9:30am -10:45am

Office Hours: Thursdays from 10:45-11:45 am
(When class is taking place remotely, I will only attend this via Zoom with prior notification. Letting me know in Thursday classes directly prior is fine.)
I am always happy to schedule other times if students are unable to make this time slot.

Course Objectives

Environmental Physiology of Animals is a course about animal function – about "how animals work". It is basically an animal physiology course, taught from an ecological and evolutionary perspective. The course will incorporate the following themes into physiological topics: comparative, ecological, environmental, evolutionary, integrative, and organismal. It will to some extent address molecular and cellular mechanisms, but it will mainly emphasize the organismal, ecological, and evolutionary significance of physiological function. This course will address the following objectives:

1) Students will be able to describe how the body senses and responds to environmental variation.
2) Students will learn to interact with data presentations from primary literature (tables and graphs). These data will be interpreted in the context of what was discussed during the lecture portions.
3) Students will learn about effective experimental design to study animal physiology (comparative approaches, experimental approaches, etc).
4) Students will learn how to effectively communicate scientific topics to a general audience.

Prerequisites

You must have passed Ecology (BIOSC 0370) with a C or better before taking this course.

Textbook

Required: No textbook is required for this course. Please consult with Dr. Kohl for relevant reading material if you would like a textbook to reference.

There will be other reading assignments posted to Canvas

For additional background information into the field of Animal Physiology, check out these e-text books available through the library:

https://pitt.primo.exlibrisgroup.com/permalink/01PITT_INST/e8h8hp/alma9998506663106236

https://pitt.primo.exlibrisgroup.com/permalink/01PITT_INST/e8h8hp/alma9999483902006236

Canvas

We will be using Canvas to post a portion of the course materials. The syllabus and schedule, lecture images, and announcements will be available at http://canvas.pitt.edu. Log in on the main page and you will then have access to all of the courses for which you have registered that are using Canvas. If you need help, contact the computer help desk at 412-624-HELP.

Zoom

Virtual lectures for the beginning of the semester will take place over Zoom, with the links being posted on Canvas. Recorded lectures will be available on the Panopto tab of the Canvas page.

Options for virtual attendance while class is being held in-person will be specified in a 'Syllabus Appendix' to be posted by January 25th, 2022

E-mail Communication Policy

Although e-mail will not be used routinely in this class for communication, occasionally I may send out an e-mail notice using the University e-mail addresses available through Canvas. Such notices are also posted as Announcements on Canvas.

Each student is issued a University e-mail address (username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to http://accounts.pitt.edu, log into your account, click on 'Edit Forwarding Addresses', and follow the instructions on the page. Be sure to log out of your account when you have finished.

Preferred Name and Gender Pronouns

Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

GRADING

Exams

We will have two Mini-Exams, each worth 40 points, that will allow for exposure to my style of exam questions. The major Exams (80 points) will still cover half the semester's worth of material each. The second exam will take place during the Final Exam period.

Options for virtual exams while class is being held in-person will be specified in a 'Syllabus Appendix' to be posted by January 25th, 2022

Projects

Throughout the semester, there will be three "science communication projects" where you will take concepts learned in class and turn them into projects targeted towards the general public. These will be a meme/cartoon, a short written blurb, and a written reflection after chatting with someone who is not a scientist. These projects will be described in more detail during the semester.

Projects are due on Canvas by **12:00 midnight on the due dates below**. Late submissions will incur a penalty of 1 point per day.

In Class Activities

This class will utilize active learning in a considerable number of lecture periods. Group problem sets will be posted on Canvas when class is run virtually, and may be paper or over Canvas when in person (to be determined).

In-Class Activities will be graded with a combination of participation and correctness. Students will be allowed to miss or drop 1 In-Class Activity. If a student completes all of these, then their lowest score will automatically be dropped.

Peer Reviews

Peer review is an important part of improving any work. We will dedicate portions of lecture classes to the peer review of the first two "science communication projects". Therefore, **drafts of your projects are required by those dates.** As part of this, there will be a short Peer Review Form that will be used for grading. Students may arrange with classmates to meet outside of lecture time to complete these within 1 week after the date we conduct Peer Reviews in class.

Final Grade

Your final grade will be determined on the basis of your total points earned for the semester.

Criteria	**Total Possible**
In-Class Activities	50 points
Peer Reviews (10 pts each)	20 points
Meme/Cartoon Assignment	30 points
Written Blurb	40 points
Conversation with a Non-Scientist	40 points
Mini-Exam2 (40 pts each x 2)	80 points
Exam 1	80 points
Exam 2	80 points
Total	**420 points**

Your final grade is based on your total numerical points for the semester, using a curve method, and not on averaged letter grades for any quiz or project. Your score position relative to the class mean will be important, not the actual numerical score. Therefore, you should make every effort to do your best work and earn as many points as possible on each exam and problem set. Additionally, the number of points for in-class activities may not add up to 50 points exactly, and so scores earned by students will be normalized to be equivalent to the weighting system above.

G Grades

If you wish to petition for a G grade, you must submit a request for this grade in writing to me, and you must document your reason(s). You will be required to make arrangements for the specific tasks that you must complete to remove the G grade. Remember that G grades, according to SAS guidelines, are to be given only when students who have been attending a course and have been making regular progress are prevented by circumstances beyond their control from completing the course after it is too late to withdraw. If you miss the final exam, you may receive a G grade if the above conditions are met.

Academic Integrity Policy

Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators. To learn more about Academic Integrity, visit the Academic Integrity Guide for an overview of the topic. For hands on practice, complete the Understanding and Avoiding Plagiarism tutorial.

Disability Resources and Services

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both the instructor and the Office of Disability Resources and Services, 140 William Pitt Union, 412-648-7890 (phone)/412-624-3346 (fax), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

Course Schedule – 2022

DATE	TOPIC	In-Class Quizzes / Peer Reviews	DUE DATES
Jan. 11	Introduction to Course		
Jan. 13	Data Literacy + Basic Concepts		
Jan. 18	Methods for Comparative Physiology		
Jan. 20	Enzymes, Membranes, Transport		
Jan. 25	Science Communication		
Jan. 27	Homeostasis + Metabolism/Energetics		
Feb. 1	Metabolism and Energetics (cont.)		
Feb. 3	Metabolism and Energetics (cont.)	**MINI-EXAM 1**	
Feb. 8	Respiration		
Feb. 10	Circulation	PEER REVIEW OF MEME/CARTOON	
Feb. 15	Adaptations to Low Oxygen		
Feb. 17	Thermoregulation		**MEME/CARTOON DUE**
Feb. 22	Freezing, Torpor, and Hibernation		
Feb. 24	**EXAM 1**		
Mar. 1	Digestion and Nutrition		
Mar. 3	Processing of Toxins		
Mar. 8	**SPRING BREAK - NO CLASS**		
Mar. 10	**SPRING BREAK - NO CLASS**		
Mar. 15	Microbiomes and Animal Physiology		
Mar. 17	Water Balance		
Mar. 22	Biological Clocks		
Mar. 24	Reproduction 1	**MINI-EXAM 2**	
Mar. 29	Reproduction 2		
Mar. 31	Reproduction 3		
Apr. 5	Aging/Oxidative Damage		
Apr. 7	Immunology	PEER REVIEW OF WRITTEN BLURB	
Apr. 12	Sensing the Environment		
Apr. 14	Muscles and Movement		**WRITTEN BLURB DUE**
Apr. 19	Animal Physiology in a Changing World		
Apr. 21	Conservation Physiology		

FINAL EXAM PERIOD

EXAM 2 (covering 2nd half of class)
Conversation with a Non-Scientist Assignment due