

E-mail will be the primary means of communication for the course. Check your email often and keep your mailbox below quota! Go to elearning.tamu.edu for course materials.

Course prerequisites: Graduate classification.

Course description: This first component of the Core Sequence in Ecology & Evolutionary Biology examines how physiological systems respond, over different timescales, to variation in physical and biological environments. This course has two primary goals: (1) to understand how the interaction of organism and environment determines characteristics that are relevant to ecology, and (2) to understand how these individual characteristics affect population and interspecific dynamics. Readings will be drawn from book chapters, contemporary reviews and the primary literature.

Course requirements:

- Attend all lectures. Absences for previously scheduled activities will only be excused if they are communicated well in advance. If you have not discussed an absence with the instructor ahead of time, it will be considered unexcused unless proper documentation is provided. See <http://student-rules.tamu.edu/rule07>.
- Read all required material (textbook chapters, reviews, and original papers).
- Participate actively in discussions.
- Early in the class, complete a homework assignment on searching and referencing scholarly articles.
- A short, take-home, open-book exam to be submitted the day after the last lecture; answer four questions clearly and concisely in about 20 min each.
Late exams will be downgraded a letter grade for each day late.

Course goals: The goal of this course is to provide an introduction to the key issues central to the field of physiological ecology. Examples will be drawn from studies involving plants and animals, as well as the interactions between these organisms.

Grading: Letter grades will be assigned based as follows: participation related to in-class discussion: 20%; homework assignments: 20%; a short, take-home essay exam: 60%.

Grade scale: 90-100 A; 80-89 B; 70-79 C; 60-69 D; < 60 F

Americans with Disabilities Act (ADA): The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit <http://disability.tamu.edu>.

Academic Integrity: For additional information please visit: <http://aggiehonor.tamu.edu>. Please pay close attention to guidelines on avoiding plagiarism: <http://aggiehonor.tamu.edu/Descriptions/Plagiarism.aspx>.

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

SUGGESTED TEXTBOOK READINGS

- Karasov, W.H. and Martínez del Rio, C. 2007. *Physiological Ecology: How Animals Process Energy, Nutrients, and Toxins*. Princeton University Press.
- Harrison, J.F., Woods, H.A., and Roberts, S.P. 2012. *Ecological and Environmental Physiology of Insects*. Oxford University Press.
- Lambers, H., Chapin III, F.S, Pons, T.L. 2008. *Plant Physiological Ecology*, 2nd Edition. Springer Science+Business Media.
- Larcher, W. 2003. *Physiological Plant Ecology*, 4th Edition. Springer Science+Business Media.

LECTURES

1. Overview: Plant and Animal Physiology
2. Nutrition
3. Growth processes and Size
4. Temperature
5. Water
6. Effects of Global Change

Take-home essay exam due by email at 4 pm the day after lecture 6. *One letter grade will be deducted for each day past the deadline!*