

EEBL 603 - Community Ecology

Day:	TR	Location:	TBD
Time:	TBD (75 min.)	Number of Credits:	01 Credit

Instructors:

(odd years)

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E-mail will be the primary means of communication for the course. Check your email often.

Course prerequisites: Graduate classification.

Course description: This third component of the Core Sequence in Ecology & Evolutionary Biology examines the fundamental concepts in community ecology. The main focus of the course will be conceptual development of the subdiscipline; spatial and temporal patterns of community structure; processes that determine community structure and dynamics; the interface of population, community and ecosystem ecology; and applications of community ecology for natural resource management, agriculture, and health.

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.
- Participate actively in discussions.
- Complete the final take-home exam. Late exams will be downgraded a letter grade for each day late.

Course goals: The goal of this course is for students to achieve a basic understanding of fundamental concepts and analytical methods in community ecology. By the end of this course, students are expected to know the basic vocabulary, concepts, and classic literature of community ecology; and be able to collect community-level data, perform quantitative analyses, and interpret findings in the context of current theories.

Grading: Letter grades will be assigned based as follows: active participation: 50%; short, take-home essay exam: 50%.

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.”

REQUIRED TEXTBOOK

There is no required textbook

SUGGESTED READING

The instructor will distribute reprinted articles for discussion. For additional information, students may consult the following textbooks that deal with community ecology: *Community Ecology* by Peter J. Morin; *Population Ecology* and *Community Ecology: Processes, Models, and Applications* edited by Herman A. Verhoef and Peter J. Morin; and *Community Ecology* by Gary G. Mittelbach.

LECTURES

1. Historical Biogeography and Macroecology: speciation, extinction, energy, productivity, biomass, environmental gradients, species distribution models, island biogeography
2. Species Interactions: competition, niche overlap, diffuse competition, niche complementarity, predation/parasitism, plant defenses, mutualism, commensalism, coevolutionary mosaic
3. Metacommunities and Assembly Rules: neutral model, patch dynamics, species sorting, mass effects, intermediate disturbance, functional traits, life history strategies, supply-side ecology
4. Food Webs and Other Network Perspectives: food web concepts, food web dynamics, top-down and bottom-up controls, food web subsidies, stability-diversity-complexity-productivity relationships, network models, regime shifts
5. The Challenge of Integrating Perspectives: spatial scales, temporal scales, natural vs. anthropogenic disturbances, life history variation and population regulation, alternative modeling perspectives (equilibrium, non-equilibrium, quasi-equilibrium), hierarchy and complexity
6. Applications of Community Ecology: integrated pest management, epidemiology, invasive species and biotic homogenization, extinction vortex, fisheries, habitat fragmentation, biotic indices

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!*