Community Ecology LECTURE Syllabus – FALL 2025   v. 08.18.25

BIOL 4051+4052; 4 credit hrs. (must be co-enrolled in 4051 and 4052)
BIOL 5051+5052; 4 credit hrs. (must be co-enrolled in 5051 and 5052)

Meeting place & time: Lecture: LIFE A419; Tu/Th 12:30 – 1:50 pm
Lab: GAB 550; Section 501: Th 2:00 – 4:50 pm
Section 503: F 12:00 – 2:50 pm

Instructors: **Dr. Ana Hoeinghaus**; AnaPaula.Hoeinghaus@unt.edu
Office hours: By appointment

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Office hours: By appointment

Description: This course will explore factors affecting the diversity and organization of ecological communities in space and time. Among the topics covered will be species diversity, population dynamics, species interactions, functional traits, community structure, environmental gradients and disturbance, food webs, metapopulations, metacommunities, evolutionary ecology and conservation. Lab activities will reinforce lecture topics, are expected to result in sufficient competence with modeling and statistical approaches to enable students to more fully understand published ecological research, and will provide a tool-kit of approaches useful in studies of ecological communities using the open-source language R.

Prerequisites: Biology Foundation requirements, including Ecology

Required texts:
Lecture: Mittelbach, G.G., & B.J. McGill. 2019. Community Ecology, 2nd edition. Oxford Univ. Press.
Lab: Borcard, D., Gillet, F., & P. Legendre. 2018. Numerical Ecology with R, 2nd edition. Springer

Course structure: We expect this class to be highly interactive and engaging. General concepts, theory and conservation applications will be presented and discussed during lecture periods, whereas lab activities/meetings will explore modeling and analytical approaches that accompany each topic. *We highly recommend that you read the assigned material prior to each lecture.* We will cover a large amount of material very quickly, and your success at later stages of the course will depend on developing a strong foundation early on. Contact us if you are struggling with the material – we are happy to help you learn the material and achieve the best possible outcome. However, we cannot help you if you only reach out to us at the end of the semester.

Canvas: Get familiar with Canvas – it is the portal through which primary course communication will take place, materials will be disseminated and article discussions will occur prior to in-class discussions. Check Canvas regularly for course updates and materials, such as updates to the syllabus, readings, and other materials used in class. *Students are responsible for checking for announcements*; we recommend that you select notifications 'on' in your Canvas settings.

Grading: Letter-grades will be calculated based on percentage of possible points attained, with A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, and F = below 60%.

> *Undergraduate students:* Assessment for lecture will be comprised by four exams, four article review discussions and four quizzes. Exams will cover assigned readings (textbook and journal articles) and material presented during lectures. Note that not all material in the

text will be directly presented during lecture and that not all lecture material is covered in the text – they are *complementary* and *you are responsible for both*. Points for article discussions are awarded for participation on the Canvas discussion thread (AI-generated posts will receive a grade of zero). Quizzes highlight main concepts or terminology and serve as practice questions prior to exams.

> *Lecture grade:* Percentage earned of 500 total possible points
> Four exams (100 points each, 400 points total)
> Four article discussions (20 points each, 80 points total)
> Four quizzes (5 points each, 20 points total)
>
> *Lab grade:* Refer to the separate lab syllabus provided

Graduate students: Graduate students will be assessed at a higher level than undergraduate students. This includes higher expectations on exam long answer questions (i.e. additional components to answer for full credit), presenting a 'case study' article review in lecture, serving as moderators for the article discussion thread on Canvas, and quizzes.

> *Lecture grade:* Percentage earned of 500 total possible points
> Four exams (100 points each, 400 points total)
> Present one case study (40 points)
> Moderate four article discussions (10 points each, 40 points total)
> Four quizzes (5 points each, 20 points total)
>
> *Lab grade:* Refer to the separate lab syllabus provided

Institutional Effectiveness: Students are required to take a pre- and post-test for this course as part of the Department of Biological Sciences Institutional Effectiveness assessment. The pre-test will be posted on Canvas for completion during the first week of classes. The same assessment will be administered again during the last week of classes as a post-test. The assessment will take approximately 15 minutes to complete. More details will be provided on Canvas with the assessment.

Make-up exams: Exams are to be taken when scheduled. Students will not be allowed to take any exam on a date or time other than scheduled *unless you have a verifiable medical excuse or official UNT activity*. The time and place for make-up exams will be determined by the instructor. Missed exams and/or make-up exams will be assigned a grade of zero.

Incomplete and drop: An incomplete (I) grade is given only during the last one-fourth of a semester and only if a student is (1) passing the course, (2) has a justifiable reason why the class cannot be completed on schedule, and (3) arranges with the instructor to finish the course at a later date. All work must be completed within the time specified by the instructor (not to exceed one year after taking the course). An incomplete may be requested by qualified students beginning on November 8. The last day to drop a course is November 7.

Attendance: Attendance is expected – our data from teaching this course for more than 10 years indicate that students who do not attend regularly do not do well in the course. It is difficult to process all of the information presented during the semester unless you get it "first hand" and have some frame of reference (i.e. read the required materials ahead of time). We cannot stress enough the importance of attending lectures, asking questions and taking notes during class meetings. Please take time to read the material on the "Succeed at UNT" website: www.succeed.unt.edu.

Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the

instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

ADA Policy: The University of North Texas complies with the Americans with Disabilities Act of 1990 in making reasonable accommodation for qualified students with disabilities. If you have a qualifying disability as defined in the ADA and would like to request accommodation, please contact the Office of Disability Accommodation at (940) 565-4323. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. For additional information see the Office of Disability Accommodation website at http://www.unt.edu/oda.

Academic integrity: According to UNT Policy 06.003 on Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. Visit University of North Texas' Student Academic Integrity Policy: https://policy.unt.edu/policy/06-003 to obtain additional information and refer to the Student Code of Conduct and the Office of Students' Rights and Responsibilities (http://www.unt.edu/csrr) for information on how any cases of academic dishonesty will be handled.

TENTATIVE SCHEDULE

Week 1 (Aug 19/21): Course introduction; What is a community?
Readings: Chapter 1

Week 2 (Aug 26/28): Patterns of Biodiversity; Biodiversity and Ecosystem Functioning (BEF)
Readings: Chapters 2 and 3

Week 3 (Sept 2/4): BEF cont.; Population Dynamics
Readings: Chapter 4

Week 4 (Sept 9/11): Predator-Prey Interactions
Participate in the Canvas discussion before Wednesday 5:00 PM
Readings: Chapter 5

Week 5 (Sept 16/18): EXAM 1 TUESDAY; Selective Predators, Responsive Prey
Readings: Chapter 6

Week 6 (Sept 23/25): Fundamentals of Competition
Readings: Chapter 7

Week 7 (Sept 30/ Oct 2): Species Coexistence; Mutualism and Facilitation
Readings: Chapter 8

Week 8 (Oct 7/9): Mutualism and Facilitation; *EXAM 2 THURSDAY*
Participate in the Canvas discussion before Monday 5:00 PM
Readings: Chapter 9

Week 9 (Oct 14/16): Species Interactions in Networks; Food Webs
Readings: Chapters 10 and 11

Week 10 (Oct 21/23): Food Webs; Community Assembly and Species Traits
Readings: Chapters 11 and 12

Week 11 (Oct 28/30): Community Assembly and Species Traits; *EXAM 3 THURSDAY*
Participate in the Canvas discussion before Monday 5:00 PM
Readings: Chapter 12

Week 12 (Nov 4/6): Patchy Environments: Metapopulations and Metacommunities
Readings: Chapters 13 and 14

Week 13 (Nov 11/13): Metacommunities; Species in Variable Environments
Readings: Chapters 14 and 15

Week 14 (Nov 18/20): Species in Variable Environments; Evolutionary Community Ecology
Readings: Chapter 15 and 16

Week 15 (Nov 25/27): No class; Thanksgiving break

Week 16 (Dec 2/4): Final thoughts; No class Thursday (Pre-finals day)
Participate in the Canvas discussion before Monday 5:00 PM
Readings: Chapter 17

EXAM 4: THUSDAY, December 11, 10:30 AM – 12:30 PM

Key dates to add to your calendar:

September 11 – 5:00 PM Deadline for online article #1 discussion contributions
September 16 – Exam 1
October 6 – 5:00 PM Deadline for online article #2 discussion contributions
October 9 – Exam 2
October 27– 5:00 PM Deadline for online article #3 discussion contributions
October 30 – Exam 3
December 1 – 5:00 PM Deadline for online article #4 discussion contributions
December 11 – Exam 4

November 7 – last day to drop with a grade of W
November 8 – first day to request a grade of Incomplete