



Course Information

Spring 2026: Tropical Ecology and Sustainability – BIOL- 3105
Part of the semester abroad at the Quetzal Education Research Station

Instructor Information

Instructors: Dr. John Cossel, **Dr. David Hille**, Dr. Bruce Hoagland, & Dr. Mike Mooring
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Office Hours: send me a WhatsApp message and we can arrange a meeting time

Course Description

Ecology is the study of relationships between organisms and their environment. A study of ecology in a biological hotspot like Costa Rica will involve observing different types of organisms and focusing on how they live and interact with each other and their environment. The approach taken in this course is to bring together students and expert faculty guides to explore tropical ecology in Costa Rica. Expert faculty guides will rotate into the QERC community and lead students in the study of particular ecological elements as defined by their own specialization. Students will also observe the interactions of humans, as an organism in the environment, and examine the ways humans construct relationships with the environment that foster varying degrees of sustainability. Topics may include biogeography, botany, microbial biology, ornithology, herpetology, stream biology, invertebrate biology, conservation, etc.

Learning Outcomes

Upon successful completion of the course, students will be able to:

- Describe the characteristics of the various tropical biomes and differentiate between them by identifying floral and faunal diversity and structure.
- Articulate an understanding of tropical ecosystems as an interrelated set of cycles and systems (e.g. nutrient cycle, energy flow (trophic levels), carbon cycle, water cycle).

- Articulate the characteristics of tropical forests that make them unique and distinguish them from temperate forests.
- Describe the factors that shape and determine tropical weather patterns (e.g. elevation, temperature range (adiabatic lapse rate), precipitation, seasonality).
- Demonstrate a general knowledge of neotropical animal species and plant families, especially those in the Upper Savegre Valley.
- Articulate a basic understanding of the intricacies of coevolutionary development (e.g. quetzal and *aguacatillo*, bats and fruit pollination, mosquitoes and bot flies).

Course Materials

Text: Tropical Ecology. Kricher, John. 2011, Princeton University Press.
ISBN: 9780691115139

Grade Determination

Field Notebook	15 %
Readings and Reflections	15 %
Potential Species List	15 %
Species Reports	15 %
Study Tour Exercises	20 %
Final Exam (comprehensive)	20 %

***May include the following or additional assignments depending on the unit professor.**

Field Notebook: For ecologists, the field notebook is an essential part of documenting field observations. As a field course, your field notebook is a vital component of how you document your course work and learning. For specific requirements, follow instructions provided by each unit professor.

Readings and Reflections: Readings are assigned to support your learning from lectures and field time. Follow assignment instructions provided by each unit professor.

Potential Species List: According to the instructions from each unit professor, you will generate a list of potential species that you may have an opportunity to observe in the montane forest biome (especially for herps, mammals and birds).

Species Reports: To explore faunal diversity, you will prepare species reports according to instructions provided by each unit professor.

Study Tour Exercises: Two study tours will take your mobile classroom away from San Gerardo de Dota: 1) Pacific Lowlands Biodiversity Tour and 2) Biomes Tour. A variety of assignments will guide your learning and assessment while on these study tours.

You will receive one letter grade for the course based on the following scale:

93.0 - 100% = A	90.0 – 92.9 = A-	87.0 - 89.9 = B+
83.0 – 86.9 = B	80.0 - 82.9 = B-	77.0 - 79.9 = C+
70.0 - 76.9 = C	60.0 – 69.9 = D	<60 = F

Cheating or plagiarism will result in a failing 0% for that assignment/test (it will also be reported to the Academic Dean). A second time of cheating will result in a failing grade for the course. Your grade will be posted on Canvas.

Course Policies and Guidelines

SNU believes there is a strong relationship between class attendance and academic progress. Regular class attendance, therefore, is expected of all SNU students. Please read the Class Attendance statement in the SNU Catalog. Practice for teams or organizations are not considered an excused absence.

Inclusivity and Respect

As a Christ-centered community, we endeavor to foster a supportive environment of dignity and inclusivity in which all stakeholders, regardless of their perspectives and individual differences, are treated with respect and charitable discourse.

Disability Statement

Mission: The mission of Disability Services is to provide and coordinate support services that enable students with disabilities to receive equal access to all aspects of university life. Students needing assistance with a learning, physical or psychological disability that may affect his or her academic progress are encouraged to contact [Disability Services](#).

Institutional Guidelines and Services

Students and faculty of Southern Nazarene University should be familiar with the [SNU Institutional Guidelines and Services](#) not listed in this syllabus.