

ECOLOGY AND EVOLUTIONARY BIOLOGY (EEB)

EEB 5050. Fundamentals of Ecological Modeling. (4 Credits)

Quantitative inference from ecological and environmental data. Choosing modeling methods based on knowledge of biological processes. Frequentist and Bayesian approaches; analysis of real and simulated data sets.

Enrollment Requirements: STAT 1000Q or 1100Q or 3445 or 5005 or 5505; or equivalent with instructor consent.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205050>)

EEB 5100. Preparing for a Career in Ecology and Evolutionary Biology. (1 Credit)

Introduction to the design and execution of scientific research, career planning, communication of science to multiple audiences, and broader impacts of scientific work.

Enrollment Requirements: Open to first and second year graduate students in EEB, others with consent.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205100>)

EEB 5110. Writing Research Proposals and Fellowship Applications. (2 Credits)

The craft of writing persuasive fellowship applications and funding proposals in ecology, evolutionary biology, systematics, and conservation biology. Students apply for financial support from agencies, foundations, and other sources. Includes peer review.

Enrollment Requirements: Open to graduate students in EEB, others with consent.

May be repeated for a total of 6 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205110>)

EEB 5200. Biology of Fishes. (4 Credits)

Introduction to the biology of fishes, with an emphasis on adaptation and evolutionary diversification. Topics include the evolution of major groups, morphology, physiology, behavior, and population and community ecology. Lectures, critical discussions of current journal articles, student presentations, and exercises in the field and laboratory. A research paper and class presentation are required on a topic pre-approved by the instructor.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205200>)

EEB 5203. Developmental Plant Morphology. (4 Credits)

Exploration and analysis of diversity in plant form using basic principles of plant construction and development. A research paper is required, in which the principles learned in lecture are applied to the analysis of the development of a plant from seed through reproductive maturity.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205203>)

EEB 5215. Physiological Ecology of Animals. (3 Credits)

Physiology of animals in an evolutionary context. Lectures and critical discussions of current journal articles. A research paper and class presentation are required on a topic pre-approved by the instructor.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205215>)

EEB 5220. Evolution of Green Plants. (4 Credits)

Evolution of morphological and genomic traits marking the conquest of land, the diversification of land plants, and the significance of plants in the evolution of life on earth, global climates and human civilizations. Laboratory session includes study of morphological and anatomical characters of extant and fossil plants, phylogenetic inference from morphological and molecular characters, and discussion of primary literature.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205220>)

EEB 5240. Biology of Bryophytes and Lichens. (4 Credits)

Diversity, evolution, ecology, development and taxonomy of the bryophytes (mosses, liverworts, and hornworts) and lichen-forming fungi.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205240>)

EEB 5250. Biology of the Algae. (4 Credits)

Laboratory and field-oriented study of the major groups of algae, emphasizing structure, function, systematics, and ecology.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205250>)

EEB 5254. Mammalogy. (4 Credits)

Lectures cover diversity, natural history (including behavior, ecology, reproduction, etc.), and evolution of mammals; readings from original literature are included. Laboratories cover anatomy, systematics, and distribution of major groups of mammals.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205254>)

EEB 5265. Herpetology. (4 Credits)

Lectures cover environmental physiology, ecology, and behavior of amphibians and reptiles. Emphasis is on readings from the original literature. Laboratories cover evolution, systematics, and distribution of major groups of the world.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205265>)

EEB 5271. Systematic Botany. (4 Credits)

Classification, identification, economic importance, evolution and nomenclature of flowering plants. Laboratory compares vegetative and reproductive characteristics of major families. A research paper and class presentation are required on a topic pre-approved by the instructor.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205271>)

EEB 5300. Practical Genomics in Ecology and Evolution. (3 Credits)

Computational biology skills. Focused training on analytical approaches for genomic data generated in ecology and evolutionary biology. Practical activities include writing basic scripts, accessing public data repositories, and analyzing genomic data with existing open source software to answer questions of biological interest.

Enrollment Requirements: Open to graduate students in biological sciences and related fields; others with permission.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205300>)

EEB 5301. Population and Community Ecology. (3 Credits)

Overview of population and community ecology, including population regulation and dynamics, metapopulations, species interactions, biodiversity, community structure, and evolutionary ecology. Theoretical and case-history approaches, emphasizing plants, invertebrates, and vertebrates. Lecture, discussion, and exercises in analysis and modeling.

Enrollment Requirements: Open to graduate students in EEB, others with consent.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205301>)

EEB 5310. Conservation Biology. (3 Credits)

Case studies and theoretical approaches to conservation of biological diversity, genetic resources, plant and animal communities, and ecosystem functions. Topics emphasize ecological and evolutionary principles that form the scientific basis of this emerging, interdisciplinary field, as well as socio-political, legal, economic, and ethical aspects of conservation.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205310>)

EEB 5347. Principles and Methods of Systematic Biology. (4 Credits)

Basic concepts and modern procedures employed in systematic biology: literature retrieval, species description, phylogenetic inference, nomenclature, and current conceptual issues. Laboratories include computer techniques in phylogenetic analysis.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205347>)

EEB 5348. Population Genetics. (4 Credits)

Provides a theoretical background for studies in evolution. Emphasis on understanding the conceptual foundations of the field and on the application of these concepts to an understanding of the roles of mutation and evolution of populations.

Enrollment Requirements: Recommended preparation: EEB 2245 or equivalent, MCB 2400 or MCB 2410 or equivalent.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205348>)

EEB 5349. Phylogenetics. (4 Credits)

Estimation of genealogies at the level of species and above, and their application and relevance to systematics, population genetics, molecular evolution, and comparative biology. Emphasizes maximum likelihood and Bayesian approaches. Laboratory provides practical experience with modern phylogenetics software.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205349>)

EEB 5350. Molecular Systematics. (2 Credits)

Exploration of key literature focusing on the practical aspects of incorporating knowledge of DNA sequence evolution into phylogenetic tree construction. Laboratory methods for collection of molecular data including management, extraction, amplification, and sequencing.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205350>)

EEB 5360. Physiological Ecology of Plants. (3 Credits)

The complex relationships between plants and their environment, with a focus on the unique physiological processes of plants that underlie their ecology. The impact of human-driven global change is a cross-cutting theme.

Enrollment Requirements: Not open to students who have passed EEB 3360.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205360>)

EEB 5369. Current Topics in Biodiversity. (1 Credit)

Analysis and discussion of current literature on biodiversity. May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205369>)

EEB 5370. Current Topics in Conservation Biology. (1 Credit)

Analysis and discussion of current literature on conservation. May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205370>)

EEB 5449. Evolution. (3 Credits)

A review of our current understanding of the patterns and processes of organic evolution. Class periods will include discussion and critical analysis of primary literature.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205449>)

EEB 5480. Science Communication I: Speaking to Public Audiences. (3 Credits)

Readings from the primary literature on factors influencing the success of science communications, analysis of video examples of science communicators, and discussion of the relationship of scientists to the press, public and specialized audiences. Class exercises include video-recording mock interviews, working directly with journalists, writing social media posts, and exchanging constructive feedback with peers on speaking and interview skills.

Enrollment Requirements: Instructor consent required. Intended for graduate students in a STEM field or advanced undergraduates with experience in STEM research or journalism.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205480>)

EEB 5482. Science Communication II: Writing for Public Audiences. (3 Credits)

Readings from the primary literature on factors influencing the success of science communications, analysis of science writings for public and specialized audiences, and discussion of the relationship of scientists to the public and specialized audiences. Class exercises include writing about science in a variety of styles accessible to non-scientists, including social media posts, developing graphical data illustrations, and exchanging constructive feedback with peers on writing skills.

Enrollment Requirements: Instructor consent required. Intended for graduate students in a STEM field or advanced undergraduates with experience in STEM research or journalism.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205482>)

EEB 5500. Introduction to Natural History Collections. (1 Credit)

Training required for work in the EEB Biodiversity Research Collections Facility. The uses of natural history collections; policies, resources, and databases of the Collection Facility; specimen preparation and labeling; legal and ethical issues; threats to natural history collections.

Enrollment Requirements: Open to graduate students in EEB, others with instructor consent.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205500>)

EEB 5813. Evolutionary Ecology. (3 Credits)

Unifies ecological and evolutionary thinking about shared core ideas, including foundational concepts such as fitness, optimality, coexistence, speciation, dispersal, community assembly, and spatial and temporal scales. Discussions and lectures will explore each concept from ecological and evolutionary viewpoints and then seek to reconcile differences and find novel intersections. Format includes student-led discussions, modeling exercises, and both independent and group projects.

Enrollment Requirements: Open only to graduate students in biological sciences and related fields, others with consent.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205813>)

EEB 5872. Environmental Risk Assessment. (3 Credits)

An overview of understanding risks to ecosystems and ecosystem services across landscape scales, including how to predict and manage risks to food, energy, water, and ecosystems in the face of global change. Topics include working with stakeholders, identifying risks and objectives, quantifying risks, creating alternative mitigation strategies, and communicating them with stakeholders and the public.

Enrollment Requirements: Open to students in the Team-TERRA program; others with consent.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205872>)

EEB 5881. Internship in Ecology, Conservation, or Evolutionary Biology. (0 Credits)

An internship with a non-profit organization, a governmental agency, or a business under the supervision of Ecology and Evolutionary Biology faculty. Activities relevant to the practice of ecology, biodiversity science, evolutionary biology, or conservation biology will be planned and agreed upon in advance by the job site supervisor, the faculty coordinator, and the intern.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205881>)

EEB 5882. Environmental Risk Practicum. (3 Credits)

Provides an opportunity for students to work together in diverse, interdisciplinary teams to conduct risk assessments for local partners. Student teams apply skills in stakeholder engagement and risk analysis, management, and communication from the Environmental Risk Assessment course to solve real-life problems through a service-learning component.

Enrollment Requirements: EEB 5872; others with consent.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205882>)

EEB 5889. Research. (1-6 Credits)

Conferences and laboratory work covering selected fields of Ecology and Evolutionary Biology.

May be repeated for a total of 60 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205889>)

EEB 5891. Internship in Ecology, Conservation, or Evolutionary Biology. (1-9 Credits)

An internship with a non-profit organization, a governmental agency, or a business under the supervision of Ecology and Evolutionary Biology faculty. Activities relevant to the practice of ecology, biodiversity, evolutionary biology, or conservation biology will be planned and agreed upon in advance by the job site supervisor, the faculty coordinator, and the intern. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of nine credits.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205891>)

EEB 5894. Seminar. (1-3 Credits)

Study and discussion of current researches, books and periodicals in the field of Biology. Subtopic designations: Ec, Ecology; M, Mammalogy; Mec, Marine Ecology; Pr, Parasitology; En, Entomology; Bi, Biogeography; Ev, Evolution; Sy, Systematics.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205894>)

EEB 5895. Investigation of Special Topics. (1-6 Credits)

Advanced study in a field within Ecology and Evolutionary Biology.

May be repeated for a total of 72 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205895>)

EEB 5899. Independent Study. (1-3 Credits)

A reading course for those wishing to pursue special work in biology.

It may also be elected by undergraduate students preparing to be candidates for degrees with distinction.

May be repeated for a total of 6 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%205899>)

EEB 6480. Seminar in Vertebrate Biology. (1 Credit)

Analysis and discussion of current literature in vertebrate biology.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206480>)

EEB 6481. Seminar in Biodiversity. (1 Credit)

Provides the opportunity for students to present research plans, reports of work in progress, and full-length seminars on completed research projects in ecology, systematics, and evolutionary biology to a supportive but critical audience.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206481>)

EEB 6482. Seminar in Spatial Ecology. (1 Credit)

Analysis and discussion of current literature in spatial ecology.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206482>)

EEB 6483. Seminar in Marine Biology. (1 Credit)

Analysis and discussion of current literature in marine biology.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206483>)

EEB 6484. Seminar in Plant Ecology. (1 Credit)

Analysis and discussion of current literature in plant ecology.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206484>)

EEB 6485. Seminar in Comparative Biology. (1 Credit)

Analysis and discussion of current literature in evolution and comparative ecology.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206485>)

EEB 6486. Seminar in Systematics. (1 Credit)

Analysis and discussion of current literature in systematic biology.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206486>)

EEB 6487. Seminar in Parasitology. (1 Credit)

Analysis and discussion of current literature in parasitology.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206487>)

EEB 6490. Seminar in Behavioral Ecology. (1 Credit)

Analysis and discussion of current literature in behavioral ecology.

May be repeated for a total of 24 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=EEB%206490>)