THE MAJOR IN

ECOLOGY & EVOLUTIONARY BIOLOGY (EEB)

IN YALE COLLEGE

2025-2026

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Introduction

Teaching and research in biology at Yale occurs in the three biology departments on Science Hill (Ecology & Evolutionary Biology, Molecular, Cellular, & Developmental Biology, and Molecular Biophysics & Biochemistry), in the Yale School of Medicine, and in the Yale School of Public Health. The depth and breadth of expertise in this community make Yale a leading center for students and scientists.

The Department of Ecology and Evolutionary Biology (EEB) offers broad education in the biological sciences. By helping us to understand the beauty and complexity of life, it richly supports our curiosity about nature. The subject matter ranges from molecules through cells, organs, organisms, populations, and communities to ecosystems and the ecological and evolutionary processes that have produced and continue to shape them. Biology is currently experiencing an explosion of discovery with important implications for the analysis and treatment of human disease, for the development of biotechnology, and for our capacity to recognize, understand, and deal with human impacts on the environment, including extinctions and global change. The EEB major delivers some of the major conceptual tools needed to understand these important issues.

The department offers a B.A. or B.S. degree. The B.A. program is appropriate for students who are interested in ecology, evolution and organismal diversity as part of a liberal education but do not intend to pursue graduate work in the discipline. The B.S. program is appropriate for students intending to attend medical or veterinary school or to pursue graduate study in ecology and evolutionary biology, other biological disciplines, or environmental sciences. The two programs share prerequisites but differ in core and senior requirements.

The prerequisites for the EEB major provide basic scientific literacy. Beyond the prerequisites, either of two tracks will satisfy the EEB major. The Biodiversity and the Environment track emphasizes courses appropriate for ecology, evolutionary biology, and environmental science careers; the Organismal Biology track emphasizes courses appropriate for pre-medical and pre-veterinary students. Pre-medical and pre-veterinary students in the Organismal Biology track may use courses required by medical schools, but not by the major, as electives.

College seminars do not count toward the requirements of the major.

The department offers a variety of courses without prerequisites for non-majors. These include all 1000-level offerings and the 2000-level courses that deal with organism groups (e.g., plants, fishes, mammals, birds, insects, and invertebrates).

Independent Research: EEB majors can pursue independent research in both laboratory and field-based projects. With approval, independent research for credit can be conducted under the supervision of faculty members in any department at Yale.

Studying Abroad: Participation in study abroad programs is encouraged. Credit for courses taken abroad may apply to the major if approved in advance by the Office of International and Summer Programs and by the DUS, who will want to see a syllabus that describes content, workload, and methods of evaluating performance. You are strongly encouraged to consult with the DUS before studying abroad.

Credit/D/Fail: No course taken to fulfill distribution requirements, as a prerequisite of the EEB major, or as a requirement of the EEB major may be taken Credit/D/Fail. All such courses must be taken for a letter grade.

What does the EEB Major do for me?

The EEB major provides excellent preparation for a wide range of careers in medicine, public health, the pharmaceutical industry, science writing, teaching, conservation, climate change, and research. EEB undergraduates enjoy a high rate of acceptance at medical and graduate schools.

Lecture Courses for Non-Majors

EEB offers a number of courses with *no prerequisites* for students majoring in other subjects.

EEB 1106a/MCDB 1060a/HLTH 1550a, Biology of Malaria, Lyme, and Other Vector Borne Diseases. This introduction to the biology of pathogen transmission from one organism to another by insects focuses on malaria and Lyme disease. Biology of the pathogens including modes of transmission, establishment of infection, host immune responses, and the associated challenges to prevention and treatments.

EEB 1115a, Conservation Biology. An introduction to ecological and evolutionary principles underpinning efforts to conserve Earth's biodiversity. Efforts to halt the rapid increase in disappearance of both plants and animals. Discussion of sociological and economic issues.

EEB 1125b/EPS 1250b, History of Life. Examination of fossil and geologic evidence pertaining to the origin, evolution, and history of life on Earth. Emphasis on major events in the history of life, on what the fossil record reveals about the evolutionary process, on the diversity of ancient and living organisms, and on the evolutionary impact of Earth's changing environment.

EEB 1145b, Plants and People. The interaction of plants and people throughout history explored from biological, historical, anthropological, and artistic perspectives. Basic botany; plants in the context of agriculture; plants as instruments of trade and societal change; plants as inspiration; plants in the environment. Includes field trips to the greenhouses at Yale Marsh Botanical Garden, the Yale Peabody Museum and Herbarium, the Yale Farm, and the Yale Art Gallery.

EEB 2225b, Evolutionary Biology. An overview of evolutionary biology as the discipline uniting all of the life sciences. Reading and discussion of scientific papers to explore the dynamic aspects of evolutionary biology. Principles of population genetics, paleontology, and systematics; application of evolutionary thinking in disciplines such as developmental biology, ecology, microbiology, molecular biology, and human medicine.

EEB 2246a, Plant Diversity and Evolution. This course has several interrelated objectives. First, it serves as an introduction to the science of phylogenetics, providing an overview of both the theory and methodology involved in constructing phylogenetic trees, and how to use trees to study character and organismal evolution. For our second objective, we put this new framework to immediate use by using phylogeny to explore and illustrate 400 million years of land plant evolution, with emphasis on the diversity of flowering plants. The course examines major trends in plant evolution from functional, ecological, and bio-geographical perspectives. Students acquire a basic understanding of 1) phylogenetic approaches to comparative biology, 2) plant anatomy and morphology, 3) evolutionary relationships among the major land plant clades (with emphasis on the flowering plants), and 4) major evolutionary trends that have significantly shaped the diversity of plant life that we see today. The third and most important objective is to instill in students the ability to look at any biological problem through the lens of "phylogeny-colored glasses"- a powerful way

to examine the complexity of life that surrounds (and includes!) us.

EEB 2255a, Invertebrates. An overview of animal diversity that explores themes including animal phylogenetics (evolutionary relationships), comparative studies of evolutionary patterns across species, organism structure and function, and the interaction of organisms with their environments. Most animal lineages are marine invertebrates, so marine invertebrates are the focus of most of the course.

EEB 2262a, The Biology of Sharks and Their Relatives. An integrative course that examines the biology of sharks and other cartilaginous fishes (Class Chondrichthyes) from a variety of perspectives. Students learn about the taxonomy and systematics, paleontology, functional anatomy, behavior, physiology, ecology, and cultural significance of sharks. Coursework includes answers to discussion prompts, guided review of scientific literature, and in-class exams that allow students to demonstrate their understanding of chondrichthyan biology and sharks' unique place in the vertebrate tree of life. To be taken with EEB 2263L.

EEB 2264b, Ichthyology. A survey of fish diversity, including jawless vertebrates, chimeras and sharks, lungfishes, and ray-finned fishes. Topics include the evolutionary origin of vertebrates, the fossil record of fishes, evolutionary diversification of major extant fish lineages, anatomy and physiology, biogeography, ecology, and reproductive strategies of fishes.

EEB 2272b, Ornithology. An overview of avian biology and evolution, including the structure, function, behavior, and diversity of birds. The evolutionary origin of birds, avian phylogeny, anatomy, physiology, neurobiology, breeding systems, and biogeography.

EEB 2275b/EVST 3400b, Biological Oceanography. Exploration of oceanic ecosystems and how these environments function as coupled physical/biological systems. Ocean currents and other physical processes determine where nutrients are available to support primary production and where organisms from plankton to top predators occur. Includes discussion of anthropogenic impacts, such as the effects of fishing and climate change on marine ecosystems.

EEB 2290b, Comparative Developmental Anatomy of Vertebrates. A comparative study of vertebrates that focuses on anatomical diversification over evolutionary time. Topics include major transformations in vertebrate evolution as well as introductions to functional anatomy, vertebrate sensory structures, and evolutionary developmental biology.

Starting in the EEB Major

BIOL Introductory Courses

EEB, MCDB and MB&B combine efforts to teach a yearlong Introductory Biology course consisting of four one-half credit modules. The completion of all these modules is a prerequisite for each of these majors and will probably also be necessary for any student contemplating a career in the health sciences regardless of the student's major.

BIOL 1010, Biochemistry and Biophysics. Edgar Benavides, Lilian Kabeche, Michael Koelle, & Thomas Loreng**.** MW 11:35 – 12:50, 1/2 credit

Introduction to the study of life at the molecular level. Topics include the three-dimensional structures and function of large biological molecules, the human genome, and the design of antiviral drugs to treat HIV/AIDS. Prerequisite: The first of four modules in a yearlong introductory biology sequence; meets for the first half of the term.

BIOL 1020, Principles of Cell Biology and Membrane Physiology. Shirin Bahmanyar, Edgar Benavides, Amaleah Hartman, Valerie Horsley, & Thomas Loreng. MW 11:35 – 12:50, 1/2 credit

Introduction to the study of cell biology and membrane physiology. Topics include the organization and functional properties of biological membranes, membrane physiology and signaling, rough endoplasmic reticulum and synthesis of membrane/secretory membrane proteins, endocytosis, the cytoskeleton, and cell division. Prerequisite: The second of four modules in a yearlong introductory biology sequence; meets for the second half of the term.

BIOL 1030, Genes and Development. Edgar Benavides, Vivian Irish, Thomas Loreng, & Weimin Zhong, MW 11:35 – 12:50, 1/2 credit

Introduction to genes, genetics, and developmental biology. How genes control development and disease; Mendel's rules; examples of organ physiology. Prerequisite: The third of four modules in a year-long introductory biology sequence; meets for the first half of the term.

BIOL 1040, Principles of Ecology and Evolutionary Biology. Edgar Benavides, Thomas Loreng, Richard Prum, & David Vasseur. MW 11:35 – 12:50, 1/2 credit

Introduction to ecology, evolutionary biology, animal behavior, and the history of life. Evolutionary transitions and natural selection. Adaptation at genic, chromosomal, cellular, organismal, and supra-organismal levels. Distributional and social consequences of suites of organismal adaptations. Prerequisite: The fourth of four modules in a year-long introductory biology sequence; meets for the second half of the term.

Placement Exam for BIOL Requirement

All students are required to take all four of the BIOL introductory modules as prerequisites for the EEB, MB&B and MCDB majors. Students with score of 5 on the AP Biology Exam or a score of 7 on the IB Biology exam are eligible to take a Yale-developed placement exam in the biological sciences available to incoming first-years as an online exam beginning sometime in July. Based on performance on the placement exam, students may be exempted from some of the introductory modules. ***The placement exam option is only allowed to incoming first-years. Students cannot take this exam later in their studies.***

The Department of Molecular Biophysics and Biochemistry (MB&B) has provided a guide to BIOL placement exams at https://mbb.yale.edu/academic-programs/undergraduate-education/biol-101-104-placement-exams.

Note that many biology courses require one or more of the introductory modules as prerequisites. Please check each course description carefully.

Prerequisites for the EEB Major

The prerequisites for the major are intended to provide core scientific literacy; they include courses in biology, chemistry, physics, and mathematics. Finishing these introductory courses early allows for a more flexible program in later years, but it is not necessary to complete them before declaring the major.

The introductory biology sequence (BIOL 1010, 1020, 1030, and 1040) is required. Also required are a two-term lecture sequence in General Chemistry, (CHEM 1610 & 1650 or CHEM 1630 & 1670) taken with associated laboratories (CHEM 1340L and 1360L); one term of mathematics (MATH 1150, 1160, or 1200) or one term of statistics & data science (S&DS 1000-1060 or 2300). Optionally, Organic Chemistry for First Year Students (CHEM 1740 and 1750) and the associated laboratories (CHEM 2220L and 2230L) satisfies the chemistry requirement. A different statistics course approved by the (DUS) may be substituted for the mathematics prerequisite.

Students must take four additional courses, for a total of four credits, from among the following options: MATH 1150 or 1160, MATH 1180 or 1200, MATH 2220 or 2250 or 2260, 2350, 2410, 2420, 2440, 2460, 2470, 2550 or 2560, 3020, S&DS 1000-1060, 2200, 2300, 2380, 2400, CPSC 1000, 1120, 1230, 2010, CHEM 1740 or 2200, CHEM 1750 or 2210, CHEM 2220L, 2230L, PHYS 1710 or 1810, EPS 1100, 2120, 2200, 2220, 2320, 2400, 2550. No more than two of these four additional courses may originate in the same department. Further prerequisite options will be determined periodically; please consult Yale Course Search with the course attribute "YC EEB: Prereq Option" for the most current list.

An online program, ONEXYS for Physics, is offered in the summer by the Mathematics and Physics departments and by the Poorvu Center for Teaching and Learning to review math skills needed in preparation for introductory physics courses.

Acceleration credit awarded in chemistry, mathematics, and physics, or completion of advanced courses in those departments, may be accepted in place of the corresponding prerequisites for the EEB major. Students who have mathematics preparation equivalent to MATH 1150 or higher are encouraged to take a statistics course (usually S&DS 1010–1060) and/or additional mathematics or statistics courses such as MATH 1200, 1210, 2220, and S&DS 2200 or 2300. Because chemistry courses are prerequisite to several EEB courses, students are strongly urged to take general chemistry in the first or second year.

Roadmap to the Major

Ecology & Evolutionary Biology

	B.S. Ecology and Evolutionary Biology *Concentrations: Biodiversity and the Environment, or Organismal Biology*	B.A. Ecology and Evolutionary Biology *Concentration: Biodiversity and the Environment*	B.A. Ecology and Evolutionary Biology *Concentration: Organismal Biology*
Degrees Offered			
Prerequisites for entering the major	**Intro Biology sequence** (BIOL 1010, 1020, 1030, and 1040)		
	2 term lecture sequence in General Chemistry (CHEM 1610, 1650 or CHEM 1630, 1670) with labs (CHEM 1340L, 1360L)		
	1 term of mathematics or 1 term of statistics & data science MATH 1150 or MATH 1160 or MATH 1200 or S&DS 1000 or S&DS 2300		
	4 total credits chosen from this entire list; no more than two term lecture courses from a single department		
	MATH 1150 or 1160 MATH 1180 or 1200 MATH 2220, 2250, or 2260 MATH 2350 MATH 2410 MATH 2420 MATH 2440 MATH 2460 MATH 2470 MATH 2550 or 2560 MATH 3020	S&DS 1000 S&DS 2200 S&DS 2300 S&DS 2380 S&DS 2400 CPSC 1000 CPSC 1001 CPSC 1230 CPSC 2010 PHYS 1700 or 1800 PHYS 1710 or 1810	CHEM 1740 or 2200 CHEM 1750 or 2210 CHEM 2220L CHEM 2230L EPS 1100 EPS 2120 EPS 2200 EPS 2220 EPS 2320 EPS 2400 EPS 2550
Core Courses for EEB Major	**B.S. Degree 5.5 course credits** (not incl prereqs or senior req)	**B.A. Degree 3.5 course credits** (not incl prereqs or senior req)	**B.A. Degree 3.5 course credits** (not incl prereqs or senior req)
	Same as B.A. degree requirements (either concentration)	EEB 2220 (General Ecology)	EEB 2290 and 2291L (Comparative Anatomy with Lab)
	Two electives; at least one elective must be a lecture or a seminar.	EEB 2225 (Evolutionary Biology)	EEB 2295 (Comparative Physiology) or BENG 3200 (Physiological Systems)
		1 'ology' course with lab (EEB 2246-2273L or EEB 3326 and 3327L)	MCDB 3000 (Biochemistry) or MB&B 3000 (Principles of Biochemistry I)
Senior Requirements	**2 terms original research** (EEB 4475, 4476) **or** (EEB 4495, 4496)	**1 term independent study** (EEB 4470) **or** **Senior Essay in a course**	**1 term independent study** (EEB 4470) **or** **Senior Essay in a course**
Substitutions	Substitutions permitted with DUS approval (see YCPS for details).		

Updated March 2025

Research Opportunities

Students interested in research can work on a broad spectrum of subjects in EEB, MCDB, MB&B, Earth & Planetary Studies (EPS), Anthropology (ANTH), and in the Schools of Medicine (YSM), Public Health (YSPH), and the Environment (YSE). Those subjects include molecular biology, biochemistry, genetics, cell biology, neurobiology, physiology, environmental sciences, plant science, ecology, evolution, and behavior. Students may work in laboratories for academic credit or experience, and financial support may be available, but students who are being directly paid may not receive course credit.

The choice of a research laboratory should be made in consultation with faculty members and the Director of Undergraduate Studies (DUS) or Research Coordinator (RC). Opportunities can be found on the following web sites: https://eeb.yale.edu/, https://biology.yale.edu/, https://undergradresearch.yale.edu/, and https://www.yura.yale.edu/ . Descriptions of research programs within EEB can be found below in the section titled *Faculty and Research Interest.* Research Coordinator Dr. Annise Dobson can also assist students in identifying prospective research advisors.

Research Courses

During the academic year, seniors with DUS or RC approval may take EEB 4475 & 4476 or EEB 4495 & 4496. These courses are primarily for students who are doing independent research to fulfill the senior requirement. Students who wish to do research earlier in their course of study may take EEB 4469 or EEB 4474 *before* their senior year. These courses do not substitute for other major requirements, but all count towards the 36 credits required for the Yale College degree. For research courses, hours are typically arranged at the mutual convenience of the student and the faculty advisor. Students taking these courses are expected to devote an average of 10 hours per week to their research. Approval from the Yale College Committee on Honors and Academic Standing is required to exceed certain limits. A student must petition that committee for permission to enroll in more than one research course in any one term before the senior year or for more than 2 course credits in research in any one term during the senior year. Permission is also required for a student to enroll in more than three such course credits in the first six terms of enrollment. In the petition, sound academic reasons must be given for exceeding these limits.

Students taking EEB 4475 & 4476 are expected to spend at least 10 hours per week in the laboratory of a faculty member over two terms in senior year. Students must re-register each term to be enrolled, and at the completion of *each* term, a paper must be submitted to their professor. ***Please note that taking EEB 4475/4476 or EEB 4495/4496 does not satisfy the lab requirement or the elective requirement.***

Summer Research

Yale students can also do full-time research with a faculty member over the summer. Summer research allows students to continue research begun during the previous academic year or to begin research that will be continued during the subsequent academic year. Some faculty members have grant funds that can support students during the summer. Other possibilities for financial support can be found at http://www.yale.edu/yser/fellowships.html . Interested students should consult a member of the Yale faculty or the DUS. Academic credit is not granted unless the student is registered in (and paying tuition to) the Yale Summer School.

Summer research at other institutions is possible through several programs. Yale does not award academic credit for research done at other institutions, even if done in the context of a course.

Go to studentgrants.yale.edu to look for sources of research funding.

Go to Yale School of the Environment Career Development Office for internship opportunities.

USA Summer Programs in Field Stations:

Biological Field Stations: http://www.obfs.org/

Duke University Marine Laboratory: http://www.nicholas.duke.edu/marinelab/

Cary Institute of Ecosystems Studies: https://www.caryinstitute.org/about

Marine Biological Laboratory – Woods Hole: http://www.mbl.edu

Mountain Lake Biological Station – University of Virginia http://mlbs.virginia.edu

Shoals Marine Laboratory: http://www.sml.cornell.edu

University of Michigan Biological Station: http://www.lsa.umich.edu/umbs/

University of Notre Dame Environmental Research Center: https://underc.nd.edu/education/

Studies Abroad

EEB majors may participate in programs that include study abroad. Programs approved for a full semester of credit by the Yale College Studies Abroad program include the Organization for Tropical Studies (OTS) in Costa Rica and School for Field Studies in several localities. More detailed information can be found on the web site: https://studyabroad.yale.edu/

Application to both the programs and to the Studies Abroad Committee should be done early in the semester preceding the semester spent abroad. Summer programs also exist that may be used to fulfill some degree requirements, and in some cases credit can be transferred. How the credit in programs abroad might be applied to fulfilling the EEB major requirements depends on the program chosen and should be discussed with the DUS early in planning in a conversation supported by the syllabus of the proposed course.

Here is some information on opportunities for study abroad in EEB:

Organization for Tropical Studies – Costa Rica, South Africa
Semester and summer (Costa Rica only) programs available. Study either tropical biology and environmental science in Costa Rica or savanna ecology and conservation in South Africa.
https://tropicalstudies.org/

Tropical Biology Association – Uganda, Tanzania, Madagascar
Summer and four-month courses in tropical ecology and conservation. These courses highlight up-to-date concepts and techniques in tropical ecology and conservation.
http://www.tropical-biology.org

School for Field Studies (SFS) – Australia, Bhutan, Cambodia, Chile, Costa Rica, Kenya, Panama, Peru, Tanzania, and Turks and Caicos Islands. Semester and summer programs available. SFS teaches students field research skills through cooperative work with local communities, conservation organizations, and government agencies.
http://www.fieldstudies.org

Council on International Education Exchange – Africa, Australia, Latin America, Middle East
Semester, academic year, and summer programs available. CIEE offers programs at universities and field stations. Students can choose from a variety of arts and science courses including Biology, Ecology, and Environmental Studies.
http://www.ciee.org

AustraLearn – Australia, New Zealand
Semester, academic year, summer, and internship programs available. AustraLearn offers programs at universities in Australia and New Zealand. Students can choose from a variety of arts and science courses including Animal Science, Biology, Botany, Ecology, Environmental Science, Marine Biology, and Zoology.
https://www.studiesabroad.com/

Denmark International Study (DIS) – Copenhagen
Semester, academic year, and summer programs available. Students can select from one of the biology disciplines: Marine Biology and Ecology, or Environmental Biology, or Molecular Biology and Genetics, or Medical Practice and Policy. Students may also combine courses from various disciplines.
https://disabroad.org/

Institute for Study Abroad (IFSA)
Semester or academic year programs available. ISA offers programs at universities in 19 countries. Students can choose from a variety of arts and science courses including Anatomy, Biology, Ecology, Entomology, Environmental Science, Forestry, Genetics, and Zoology.
http://www.ifsa-butler.org/

Institute for Tropical Marine Ecology – West Indies
Semester and summer programs available. Academic programs in marine ecology, research, and conservation.
http://itme.org/

Institute for Tropical Ecology and Conservation ITEC – Panama
Tropical field courses include lectures, field exercises, and individual research.
http://www.itec-edu.org/

Where to get advice

The advising system for students majoring in EEB provides clear information on programs of study through the students' four years at Yale. Each student has three formal advisors to guide academic choices but finding the right person for a specific issue can take student initiative.

The First Year…

Upon entering Yale, each student is assigned to one of the fourteen residential colleges on campus. With this initial assignment, the first-year student encounters a team of three important advisors who help to answer questions and direct the student's choice of classes.

First, each entering student is assigned a *first-year counselor (froco)*, who is a senior living with the first-year class. The froco gives the first-years a "student's eye view" of the curriculum, courses, and instructors. Valuable as this is, it should not substitute for the advice of a faculty advisor, which is particularly important for first-years who are considering a major in science. The second advisor, also a member of the student's residential college, is usually a faculty fellow of that student's college and sometimes a member of the EEB department. The faculty advisor is responsible for advising the student about fulfilling distributional requirements in the first year. The third member of the first-year advising team is the student's residential dean. The dean has ultimate authority over the student's decisions for courses and programs of study. If the first-year faculty advisor is not a member of a science department in Yale College, the student is strongly advised to consult with the DUS in the field of the student's primary interest. Prospective science majors should arrange advising meetings before classes start in the fall.

The most important issue for prospective EEB majors is taking Chemistry in the first year because many courses require two terms of chemistry, sometimes followed by biochemistry. Starting this sequence early is essential. If a first-year student takes a second science course, it should be the introductory Biology sequence (BIOL 1010 – 1040). One may postpone the laboratory for chemistry until the year after the course is taken, but this is not recommended. Math and other prerequisites can be taken later.

…and Beyond

After the first year, a student may continue with the faculty advisor assigned for the first year or can choose a new faculty advisor for the sophomore year. EEB majors should find an advisor in the program as soon as they decide on the major. A list of EEB faculty and their affiliated colleges can be found in the next section. The sophomore year advisor usually remains a student's advisor for the next two years, but students may switch if they prefer another individual. Students may consult with the EEB DUS and RC to identify an appropriate faculty advisor. When you have identified a faculty advisor, please inform the EEB Registrar.

The EEB faculty advisor has four roles: (1) ensuring that the student fulfills the requirements for graduation; (2) ensuring that the student fulfills the requirements of the major; (3) giving guidance on the student's curriculum and future career plans; (4) writing letters of recommendation for the student when requested.

The regular faculty advisor can handle most routine issues. Certain matters need the attention of the DUS or RC. The EEB DUS & RC's names, phone numbers, and email addresses are on the inside cover of this booklet. They can also be reached through the EEB Registrar.

Yale Ecology and Evolutionary Biology Undergraduate Group (YEEBUG)

YEEBUG is an undergraduate organization dedicated to building the EEB community at Yale. YEEBUG provides a network of other students majoring in EEB, all of whom are eager to help out whether you are a declared major, thinking about declaring the EEB major, or are interested in any small aspect of EEB. YEEBUG holds social events, organizes topical panels and dinners with professors, leads field trips, and represents the group at bazaars and academic fairs. Students in the major hail from diverse backgrounds and are interested in a wide array of topics: they range from viral evolution to primate psychology, anthropology to conservation policy, fish phylogenetics to microbial ecology, agricultural entomology to biogeography and landscape ecology.

Prospective majors are welcome at all events! If you would like to subscribe to the newsletter, get in touch, or get involved please email yeebugboard@gmail.com. Check out our insta @yee.bug.

EEB Faculty and Research Interests

Primary Faculty

Adalgisa Caccone
Lecturer in Ecology and Evolutionary Biology and Senior Research Scientist in Ecology and Evolutionary Biology, School of the Environment, and Epidemiology (Microbial Diseases)

21 Sachem St, ESC 140, New Haven, CT 06511
adalgisa.caccone@yale.edu Phone: 203-432-5259

Research Interests: Molecular evolution and conservation genetics.

Robert Cieri (beginning 2026)

Research Interests: Evolutionary biomechanics and physiology of ventilation and locomotion and their interaction.

Jennifer Coughlan
Assistant Professor of Ecology and Evolutionary Biology

21 Sachem St, ESC 358, New Haven, CT 06511
jennifer.coughlan@yale.edu

Research Interests: Evolutionary genetics, using a charismatic group of wildflowers (Mimulus) to understand the genetic basis and evolutionary drivers of adaptation and speciation in nature.

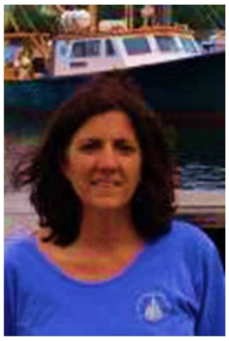
Martina Dal Bello

Assistant Professor of Ecology and Evolutionary Biology

840 West Campus Dr, WC ABC 171A, West Haven, CT 06516
martina.dalbello@yale.edu

[Pierson College Fellow]

Research Interests: community ecology, microbial ecology, marine ecology, climate change.



Mary Beth Decker
Research Scientist in Ecology and Evolutionary Biology; Lecturer in School of the Environment

260 Whitney Ave, YSB 149, New Haven, CT 06511
marybeth.decker@yale.edu Phone: 203-432-6293

Research Interests: Biological oceanography, jellyfish blooms in changing coastal and estuarine ecosystems.

Annise Dobson
Lecturer and Associate Research Scientist, EEB Undergraduate Research Coordinator

195 Prospect St, KROON 235, New Haven, CT 06511
annise.dobson@yale.edu Phone: 203-432-6865

Research Interests: Forest conservation, particularly in managed and urban forests; nutrient dynamics and soil fauna in community.

Casey Dunn
Professor of Ecology and Evolutionary Biology

260 Whitney Ave, YSB C167, New Haven, CT 06511
casey.dunn@yale.edu Phone: 203-432-3109

Research Interests: Comparative invertebrate zoology. We use phylogenetics to study evolution of genomes, genome function, morphology, and siphonophores.

Erika Edwards
Professor of Ecology and Evolutionary Biology; Curator of Botany Peabody Museum of Natural History; Director, Marsh Botanical Gardens; Acting Director, Yale Peabody Museum (2025-2026)

260 Whitney Ave, YSB C163, New Haven, CT 06511
erika.edwards@yale.edu Phone: 203-432-3869

[Pauli Murray College Fellow]

Research Interests: Evolution; phylogenetics; plant structure and function; ecological adaptation.

Vanessa Ezenwa
Professor of Ecology and Evolutionary Biology

266 Whitney Ave, BASS 334, New Haven, CT 06511
vanessa.ezenwa@yale.edu Phone: 203-432-2614

Research Interests: Disease ecology, behavioral ecology, ecoimmunology, parasitology.

Walter Jetz
Professor of Ecology Evolutionary Biology; School of the Environment

310 Prospect St, New Haven, CT 06511
walter.jetz@yale.edu Phone: 203-432-7540

Research Interests: Macroecology; community ecology; biogeography; global change biology; conservation; ecology and evolution of terrestrial vertebrates.

Joshua Moyer
Lecturer of Ecology and Evolutionary Biology

225 Prospect St, SCL 179, New Haven, CT 06511
joshua.moyer@yale.edu

[Saybrook College Fellow]

Research Interests: Functional anatomy & biodiversity of vertebrates, specializing in the ecological morphology & systematics of cartilaginous fishes (sharks and their relatives) using methods in kinematics, animal behavior, gross anatomy & dissection, histology, and biomedical imaging.

Martha M. Muñoz
Assistant Professor of Ecology and Evolutionary Biology

21 Sachem St, New Haven, CT 06511
martha.munoz@yale.edu Phone: 203-432-9861

[Jonathan Edwards College Fellow]

Research Interests: The ecology and evolution of life in motion by integrating physiology, biochemistry, and behavior. We focus on reptiles and amphibians as model systems.

Thomas Near
Professor of Ecology and Evolutionary Biology; Bingham Oceanographic Curator of Ichthyology, Peabody Museum of Natural History, Head of College-Saybrook College, EEB Director of Undergraduate Studies

21 Sachem St, ESC 364, New Haven, CT 06511-8934
thomas.near@yale.edu Phone: 203-432-3002

[Head of Saybrook College]

Research Interests: Evolutionary biology of fishes – retracing how species and lineages are treated to one another, primarily using DNA sequence data to reconstruct the evolutionary relationships of species represented through branching diagrams and phylogenies.

C. Brandon Ogbunu
Assistant Professor of Ecology and Evolutionary Biology; member of the Chemical Biology Institute, West Campus

260 Whitney Ave, YSB 331, New Haven, CT 06511
brandon.ogbunu@yale.edu Phone: 203-432-7805

Research Interests: Systems biology, population genetics, epidemiology, disease ecology and evolution, science and society.

David M. Post
Professor of Ecology and Evolutionary Biology

225 Prospect St, SCL Suite 3-3B, New Haven, CT 06511
david.post@yale.edu Phone: 203-432-3005

Research Interests: Aquatic ecology; food-web structure and dynamics; eco-evolutionary interactions; environmental change.

Richard O. Prum
William Robertson Coe Professor of Ornithology of Ecology and Evolutionary Biology, Curator Vertebrate Zoology (Ornithology) Peabody Museum of Natural History

21 Sachem St, ESC 164, New Haven, CT 06511
richard.prum@yale.edu Phone: 203-432-9423

Research Interests: Evolutionary ornithology, including phylogenetics, behavior, feathers, structural color, evolution and development, sexual selection, and historical biogeography.

Linda Puth
Lecturer in Ecology and Evolutionary Biology

225 Prospect St, SCL 177, New Haven CT 06511
linda.puth@yale.edu Phone: 203-432-8099

Research Interests: Community assembly and the consequences of diversity, primarily in freshwater algae.

Eric Slessarev
Assistant Professor of Ecology and Evolutionary Biology

210 Whitney Ave, KGL 417, New Haven CT 06511
eric.slessarev@yale.edu

[Pierson College Fellow]

Research Interests: Soil science, terrestrial biogeochemistry, ecosystem-geosphere interactions, carbon and nutrient cycling.

Alison Sweeney
Associate Professor of Physics; Ecology and Evolutionary Biology

225 Prospect St, SCL 131, New Haven, CT 06511
alison.sweeney@yale.edu Phone: 203-432-3650

Research Interests: Self-assembly and optical properties of molecular structures, biophysics, evolution of deep sea squid camouflage, combining theory with experiment

Paul Turner
Rachel Carson Professor of Ecology and Evolutionary Biology; Microbiology Faculty, Yale School of Medicine

260 Whitney Ave, YSB C149, New Haven, CT 06511
paul.turner@yale.edu Phone: 203-432-5918

Research Interests: Virus evolutionary genetics and genomics, mostly in bacteriophages and arthropod-borne viruses. We use experimental evolution to test basic biology questions, and conduct applied research on virus-based therapies to treat disease.

David Vasseur
Professor and Chair of Ecology and Evolutionary Biology

165 Prospect St, OML 426A, New Haven, CT 06511
david.vasseur@yale.edu Phone: 203-432-2719

Research Interests: Theoretical ecology; biodiversity-ecosystem function; impacts of environmental variability on population, community, and ecosystem processes; spatial population synchrony.

Michelle Wong
Assistant Professor of Ecology and Evolutionary Biology

210 Whitney Ave, KGL 418, New Haven CT 06511
michelle.y.wong@yale.edu

[Grace Hopper College Fellow]

Research Interests: Ecosystem ecology, biogeochemistry, plant-soil feedbacks, nutrient cycling.

Affiliated Faculty

Richard Bribiescas
Clayton Stephenson/Yale Class of 1954 Professor of Anthropology; Professor of Ecology and Evolutionary Biology

10 Sachem St, Room 10, New Haven, CT 06511
richard.bribiescas@yale.edu Phone: 203-432-2049

Research keywords: Human Evolution, Diversity, Life History Theory

Craig Brodersen
Howard and Maryann Newman Professor of Plant Physiological Ecology, School of the Environment

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Research keywords: Plants, Photosynthesis, Drought

Nicholas Christakis
Sterling Professor of Social & Natural Science; Professor of Internal Medicine General

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nicholas.christakis@yale.edu Phone: 203-436-4747

Research keywords: Network Science; Health, Medicine and Biosocial Science; Biodemography; Quantitative Methodology

Liza Comita
Davis-Denkmann Professor of Tropical Forest Ecology, School of the Environment

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liza.comita@yale.edu Phone: 203-436-5783

Research keywords: Biodiversity, Community Ecology, Tropical Forests

Forrest Crawford
Associate Professor Adjunct of Biostatistics, School of Public Health

221 Whitney Ave, New Haven, CT 06511
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Research keywords: Biostatistics, Infectious Diseases, Modeling

Nathan Grubaugh
Associate Professor of Epidemiology (Microbial Diseases)

60 College St, Lab of Epidem, 0608, New Haven, CT 06510
grubaughlab@gmail.com Phone: 203-737-5869

Research keywords: Arbovirology, Emerging Viruses, Virus Evolution, Genomic Epidemiology

Vivian F. Irish
Eaton Professor of Molecular, Cellular and Developmental Biology; Professor of Ecology and Evolutionary Biology

260 Whitney Ave, YSB 425, New Haven, CT 06511
vivian.irish@yale.edu Phone: 203-432-5572

Research keywords: Plant Growth, Development, and Genetics; Evolution of Developmental Mechanisms; Ecological Agriculture,

James Noonan
Albert E. Kent Professor of Genetics and Professor of Neuroscience, School of Medicine

333 Cedar St, SHM I 142C, New Haven, CT 06510
james.noonan@yale.edu Phone: 203-737-1922

Research Keywords: Embryonic and Fetal Development, Epigenomics, Molecular Evolution, Gene Regulatory Networks, Genetics, Genomics, Neurodevelopmental Diseases

Eric J. Sargis
Professor of Anthropology and of Ecology and Evolutionary Biology; Peabody Museum Curator of Zoology (Mammalogy) and Vertebrate Paleontology

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Research keywords: Biodiversity, Evolution, Paleobiology

Oswald J. Schmitz
Oastler Professor at the School of the Environment; Professor of Ecology and Evolutionary Biology

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oswald.schmitz@yale.edu Phone: 203-436-5110

Research keywords: Biodiversity Conservation, Community Ecology, Ecosystem Functioning and Services

David K. Skelly
Oastler Professor at the School of the Environment; Professor of Ecology & Evolutionary Biology; Director of Peabody Museum of Natural History

195 Prospect St, Kroon 208, New Haven, CT 06511
david.skelly@yale.edu Phone: 203-432-3603

Research keywords: Ecology and Evolution of Amphibians, Freshwater Ecosystems, Conservation Science

Jeffrey Townsend
Elihu Professor of Biostatistics, YSPH; Professor of Ecology and Evolutionary Biology

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Research keywords: Bioinformatics, Evolutionary Genomics, Phylogenetic Theory and Study Design, Population Dynamics, Infectious Diseases, Zoonotic Diseases

Serena Tucci
Assistant Professor of Anthropology

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serena.tucci@yale.edu

Research keywords: Human Evolutionary Genomics

Recommendations for Premedical Students

Most medical schools require:

One year of Biology plus one year of laboratories (University of Texas medical schools require two years of biology)

Two years of Chemistry plus two years of laboratories

One year of Physics plus laboratories

At least one term of calculus; some require a full year of Math

Biochemistry plus laboratory is often recommended by medical schools for pre-medical students and is listed by them under the Chemistry requirements, not Biology.

Many medical schools require two terms of English; some require 2-3 terms.

Increasingly, medical schools are recommending/requiring courses in statistics, psychology, and other social sciences.

Medical schools require that all courses used to fulfill the basic pre-medical requirements be taken for a letter grade, not Credit/D/Fail. In addition, only grades of C or higher are accepted. C- or lower grades are not acceptable.

Students who expect to apply to medical school should consult the Health Professions Advising Program (HPAP) at the Office of Career Strategy (OCS) located at 55 Whitney Avenue (203-432-0803), preferably during their first term at Yale. Catalogues for every American and most Canadian medical schools are available on the Internet.

Some state-supported medical schools and a few private medical schools have additional course requirements in the humanities and social sciences. All pre-medical students should check the requirements of their state-supported medical schools, as more than 70% of applicants matriculate in such schools. Individual medical school course requirements for American and Canadian applicants can be found in the AAMC publication, *Medical School Admission Requirements (MSAR),* available in the Health Professions Department at the Office of Undergraduate Career Services. Also see https://students-residents.aamc.org/

The HPAP publishes an informational bulletin with general information, *Preparing to Become a Health Care Professional*, plus specific information for those about to apply for admission to medical school (primarily junior and seniors), *Applying to Medical School*.

Students who are interested in applying as MD/PhD applicants should obtain a copy of the OCS publication, *General Information about MD/PhD Programs*. All are available on the OCS website at www.yale.edu/career/students/gradprof/medschool or at the OCS office.

Facilities

The offices and laboratories of the primary faculty members in EEB are in two buildings on Science Hill – Osborn Memorial Laboratories (OML) and the Environmental Sciences Center (ESC). OML will be undergoing renovations from 2025-2028, during which time its offices will be redistributed through SCL, YSB, KGL, BASS, and the Peabody Museum. Joint appointees are housed in their home departments. Other laboratories are in the buildings listed below.

Libraries: The several science libraries collectively constitute one of the greatest collections of biological literature in the world. The Marx Science and Social Science Library (formerly CSSSI), Peabody Museum (ornithology and entomology), School of the Environment, (forestry and environmental biology), Engineering Library and Medical Libraries (biomedical sciences) together represent a collection of approximately one million volumes.

The Marx Library is in the concourse level of Kline Tower at 219 Prospect Street. It houses both the literature of sciences and social sciences and supports computing and analysis with its StatLab. Please visit their web site for additional information. marx.library.yale.edu

Computer Facilities: Yale Information and Technology Services (ITS) provides both mainframe and microcomputer resources to the student community. A software library is available for download. Biomedical Computer Facilities, located at the Medical School's Center for Medical Informatics (medicine.yale.edu/ycmi) and accessed through remote or local terminals, are available for DNA and protein sequence analysis. The residential colleges are fully networked for access to Yale computing facilities and the Internet.

Peabody Museum of Natural History: With collections dating to 1825 and now numbering over 2,000,000 units, Yale's Peabody Museum is a major resource for research and teaching in the biological sciences. Of interest to those studying the history and diversity of life are its world-famous holdings of fossil vertebrates, including dinosaurs (150,000 units), fossil invertebrates (275,000 units), and fossil plants (100,000 units), as well as its collections of modern birds (100,000 units), insects (1,250,000 units), other animals (300,000 units), and plants (250,000 units). Students may do research and work with any of the scientific staff members of the Museum. peabody.yale.edu/education/yale-community/research-work

Genomics and Molecular Biology Facilities: University services for all aspects of molecular biological research are available in various Yale facilities. These include oligonucleotide synthesis, DNA sequencing, monoclonal and polyclonal antibody preparation, peptide synthesis, cell sorting, and amino acid analysis. In addition, facilities are available for mass spectrometry and X-ray crystallography. Equipment to generate and analyze DNA chips and protein microarrays are located both at the Yale Medical School and in the Department of Molecular, Cellular, and Developmental Biology (MCDB). Mass spectrometry, high throughput chemical genomic screening, and next generation genomic DNA sequencing including Roche/454 and Illumina/Solexa are available in the MCDB Department. In addition, the laboratories for teaching and faculty research are equipped with state-of-the-art instrumentation and equipment for specific projects.

Imaging Facilities: MCDB operates a modern light microscope imaging facility supervised by Dr. Joseph Wolenski. These microscopes are available to the Yale scientific community at competitive hourly rates. Equipment includes two Zeiss LSM 510 confocal inverted microscopes, one with near-infrared two-photon imaging capabilities and a temperature- controlled stage. MCDB also houses a spinning disk confocal microscope and a Nikon wide field microscope equipped with a color camera

for histological slides and a sensitive CCD camera for fluorescence imaging.

Structural Analysis/Electron Microscopy Facilities: MCDB operates a Structural Analysis Laboratory that includes both scanning and transmission electron microscopes and related equipment for processing, sectioning, and imaging support. These facilities are used in both teaching and research and are core resources also available to members of EEB and other Science Hill departments.

Yale Institute for Biospheric Studies (YIBS), located on the first floor of the Environmental Science Center, is the umbrella environmental science center on campus. We support and inspire the environmental community at Yale through research and training, grants and fellowships, and weekly seminars and events. We use a collaborative and cross-disciplinary approach to study the entire biosphere: from molecules to landscapes, and everything in between. yibs.yale.edu

The Center for Genetic Analyses of Biodiversity (CGAB) within YIBS offers one-on-one training and workshops to teach students how to select and use genetic markers and analytical tools. In addition to standard molecular lab equipment, it offers many pieces to assist with modern techniques such as creating libraries for Next Generation Sequencing. cgab.yale.edu

Yale Center for Geospatial Solutions (YCGS) Earth Observation Lab (EOL) is a centralized source of remote sensing hardware, software, and expertise for the Yale community. Assistance is available to help users in the selection, procurement, and analysis of satellite images for their research. This research and teaching lab is one of the Yale Institute of Biospheric Studies (YIBS) research centers, and is co-sponsored by the Yale School of the Environment. Visit: yceo.yale.edu

Plant and Animal Husbandry: Numerous controlled-environment growth chambers, constant temperature rooms, greenhouses and plant tissue culture facilities are available for environmentally controlled growth of plant materials. The major animal care facility for small mammals for the Arts and Sciences campus is also located on Science Hill.

Herbarium: The Yale Herbarium (currently housed in the Peabody Museum) consists of 350,000 systematically arranged plant specimens from algae to vascular plants. The collection includes significant type specimens in the mosses and ferns with a representation of most families and important genera of the flowering plants.
peabody.yale.edu/explore/collections/botany

Marsh Botanical Garden: The University's botanic garden and arboretum is located north of OML on the grounds of Marsh Hall at Prospect Street and Hillside Terrace. The garden features a diverse collection of native and exotic trees, shrubs, and perennials highlighting plant communities and environmental change. The greenhouses feature plants from tropical regions and arid climates as well as economically important crops. Erika Edwards (Professor of Ecology and Evolutionary Biology) is the Director of the Marsh Botanical Gardens. Kunso Kim is the Associate Director.
marshbotanicalgarden.yale.edu.

Yale's West Campus: The Core Facilities on Yale's West Campus include: Yale Center for Molecular Discovery, Yale Center for Genome Analysis, Yale Center for Research Computing,

West Campus Analytical Core, West Campus Imaging Core, Yale Electron Microscopy Core, West Campus Materials Characterization Core, West Campus Flow Cytometry Core, and West Campus Cleanroom.
westcampus.yale.edu/core-centers

Yale Nature Preserve: This tract in the Westville section of New Haven adjoins the Yale Golf Course. It is heavily wooded and has a central pond. Many groups of terrestrial and freshwater organisms are well represented in natural communities.

Yale Forests: There are more than 10,000 acres of Yale Forests managed as a working forest by the School of the Environment. They are also available by arrangement for research and instruction. The largest and closest is the 7,800-acre Yale-Meyers Forest in northeastern Connecticut. It has some lakes and a diversity of fauna, flora, and natural habitats.
forests.yale.edu

EEB Courses 2025-2026

Required Introductory Courses

BIOL 1010, Biochemistry and Biophysics. Edgar Benavides, Lilian Kabeche, Michael Koelle, & Thomas Loreng**.** MW 11:35 – 12:50, 1/2 credit

Introduction to the study of life at the molecular level. Topics include the three-dimensional structures and function of large biological molecules, the human genome, and the design of antiviral drugs to treat HIV/AIDS. Prerequisite: The first of four modules in a yearlong introductory biology sequence; meets for the first half of the term.

BIOL 1020, Principles of Cell Biology and Membrane Physiology. Shirin Bahmanyar, Edgar Benavides, Amaleah Hartman, Valerie Horsley, & Thomas Loreng. MW 11:35 – 12:50, 1/2 credit

Introduction to the study of cell biology and membrane physiology. Topics include the organization and functional properties of biological membranes, membrane physiology and signaling, rough endoplasmic reticulum and synthesis of membrane/secretory membrane proteins, endocytosis, the cytoskeleton, and cell division. Prerequisite: The second of four modules in a yearlong introductory biology sequence; meets for the second half of the term.

BIOL 1030, Genes and Development. Edgar Benavides, Vivian Irish, Thomas Loreng, & Weimin Zhong, MW 11:35 – 12:50, 1/2 credit

Introduction to genes, genetics, and developmental biology. How genes control development and disease; Mendel's rules; examples of organ physiology. Prerequisite: The third of four modules in a year-long introductory biology sequence; meets for the first half of the term.

BIOL 1040, Principles of Ecology and Evolutionary Biology. Edgar Benavides, Thomas Loreng, Richard Prum, & David Vasseur. MW 11:35 – 12:50, 1/2 credit

Introduction to ecology, evolutionary biology, animal behavior, and the history of life. Evolutionary transitions and natural selection. Adaptation at genic, chromosomal, cellular, organismal, and supra-organismal levels. Distributional and social consequences of suites of organismal adaptations. Prerequisite: The fourth of four modules in a year-long introductory biology sequence; meets for the second half of the term.

Courses and Laboratories with No Prerequisites, 2025-2026

EEB 1106a/MCDB 1060a, Biology of Malaria, Lyme, and Other Vector Borne Diseases. Alexia Belperron. MW 1pm-2:15pm

This introduction to the biology of pathogen transmission from one organism to another by insects focuses on malaria and Lyme disease. Biology of the pathogens including modes of transmission, establishment of infection, host immune responses, and the associated challenges to prevention and treatments.

EEB 1115a, Conservation Biology. Linda Puth. MW 9am-10:15am

An introduction to ecological and evolutionary principles underpinning efforts to conserve Earth's biodiversity. Efforts to halt the rapid increase in disappearance of both plants and animals. Discussion of sociological and economic issues.

EEB 1145b, Plants & People. Linda Puth. TTh 9am-10:15am

The interaction of plants and people throughout history, explored from biological, historical, anthropological, and artistic perspectives. Basic botany; plants in the context of agriculture; plants as instruments of trade and societal change; plants as inspiration; plants in the environment. Includes field trips to the greenhouses at Yale Marsh Botanical Garden, the Yale Peabody Museum and Herbarium, the Yale Farm, and the Yale Art Gallery.

EEB 2223Lb, Laboratory for Principles of Ecology, Evolutionary Biology, and the Tree of Life. Linda Puth. T or W 1:30pm-4:30pm

Study of evolutionary novelties, their functional morphology, and their role in the diversity of life. Introduction to techniques used for studying the diversity of animal body plans. Evolutionary innovations that have allowed groups of organisms to increase their diversity.

EEB 2225b, Evolutionary Biology. Jenn Coughlan & Brandon Ogbunu. TTH 10:30am-11:20am

An overview of evolutionary biology as the discipline uniting all of the life sciences. Reading and discussion of scientific papers to explore the dynamic aspects of evolutionary biology. Principles of population genetics, paleontology, and systematics; application of evolutionary thinking in disciplines such as developmental biology, ecology, microbiology, molecular biology, and human medicine.

EEB 2255a, Invertebrates. Casey Dunn. TTh 11:35am-12:50pm

An overview of animal diversity that explores themes including animal phylogenetics (evolutionary relationships), comparative studies of evolutionary patterns across species, organism structure and function, and the interaction of organisms with their environments. Most animal lineages are marine invertebrates, so marine invertebrates are the focus of most of the course.

EEB 2256La, Laboratory for Invertebrates. Th 1:30pm-4:30pm

The study of invertebrate anatomy and diversity in a laboratory and field setting. Activities will include examining live animals and museum specimens, as well as local field trips. Some field trips will fall on weekends. This lab must be taken concurrently with the lecture EEB 2255.

EEB 2264b, Ichthyology. Thomas Near. TTh 1pm-2:15pm

A survey of fish diversity, including jawless vertebrates, chimaeras and sharks, lungfishes, and ray-

finned fishes. Topics include the evolutionary origin of vertebrates, the fossil record of fishes, evolutionary diversification of major extant fish lineages, anatomy and physiology, biogeography, ecology, and reproductive strategies of fishes.

EEB 2265Lb, Laboratory Ichthyology. Thomas Near. W 1:30pm-4:30pm

Laboratory and field studies of fish diversity, form, function, behavior, and classification. The course primarily involves study of museum specimens and of living and fossil fishes. Must be taken concurrently with EEB 2264.

EEB 2275a / EVST 3400a, Biological Oceanography. Mary Beth Decker. MW 1pm-2:15pm

Exploration of oceanic ecosystems and how these environments function as coupled physical/biological systems. Ocean currents and other physical processes determine where nutrients are available to support primary production and where organisms from plankton to top predators occur. Includes discussion of anthropogenic impacts, such as the effects of fishing and climate change on marine ecosystems.

EEB 2280a, Ecology and Evolution of Marine Vertebrates. Joshua Moyer. MW 11:35am-12:50pm

Fishes, reptiles, and mammals all include species that spend all or much of their lives in or near the ocean. In this course, we survey those taxa, paying particular attention to how the biotic and abiotic aspects of marine environments have shaped organismal morphology, physiology, and behavior. Students learn about the biology of marine fishes as well as extinct marine reptiles, modern sea turtles and sea snakes, shore birds, and whales and their relatives. This course includes discussions of the conservation challenges facing each group. Because of our location and the deep historical connection our region has to fisheries, including the whaling industry of the eighteenth and nineteenth centuries, we emphasize the marine vertebrates of New England and the Mid-Atlantic coasts. This course includes a mandatory field trip to a regional aquarium or local shoreline.

Students are strongly encouraged to have taken the introductory biology sequence (BIOL 1010 to 1040) or have the equivalent understanding of biology, evolution, and ecology.

EEB 2290b, Comparative Anatomy of the Vertebrates. Joshua Moyer. MWF 11:35am-12:25pm

A survey of the development, structure, and evolution of major vertebrate groups. Topics include the micro-anatomy of major organ systems, the developmental underpinnings of the vertebrate body plan, and the development, structure, and evolution of the major organ systems such as the locomotory system, sensory organs, digestive tract, reproductive tract, and nervous system.

EEB 2291Lb, Laboratory for Comparative Developmental Anatomy of Vertebrates. Joshua Moyer. Th or F 1:30pm – 4:30pm

Microscopic examination of histological and embryological preparations. Dissection of selected vertebrate species including shark, bony fish, frog, lizard, and rat. Must be taken concurrently with EEB 2290.

Intermediate Courses, 2025-2026

Note: Prerequisites for many EEB courses numbered 2000 and above are BIOL 1010, 1020, 1030 and 1040, or permission of the instructor.

EEB 2212b, Data Science for Ecology and Conservation. Walter Jetz. W 1:30pm-3:20pm

The course provides a practical foundation for data-driven inference and prediction in biodiversity science. The first part of the course is focused on providing a unified foundation for statistical analysis in ecology and aims to complement more general introductory statistical courses. Specific foci include an introduction and practice around General Linear Models (GLMs), and their use for hypothesis testing, prediction, and forecasting, as well as maximum likelihood and non-parametric approaches, all focused on biodiversity. The course then examines the promise and practice of emerging machine learning approaches specifically for prediction. With these foundations in place, the course will tackle several case studies addressing biogeography, community ecology, local conservation, and large-scale conservation decision-making. Students will be expected to work through cases studies individually or in small groups and present on their findings in class. The course will familiarize students with R, the leading analysis and visualization software in much of the life sciences, through in-class guidance, homework and problem sets.

Prerequisite: The course assumes that students are familiar with the core concepts of probability and statistical analysis and have at minimum completed an introductory statistics course such as S&DS 1000 or similar by approval.

EEB 2220a/EEB 5220a/EVST 2200a. General Ecology. David Post & Eric Slessarev. MWF 10:30am-11:20am

The theory and practice of ecology, including the ecology of individuals, population dynamics and regulation, community structure, ecosystem function, and ecological interactions at broad spatial and temporal scales. Topics such as climate change, fisheries management, and infectious diseases are placed in an ecological context.

Prerequisite: MATH 1120 or equivalent.

EEB 2225b, Evolutionary Biology. Jenn Coughlan & Brandon Ogbunu. TTH 10:30am-11:20am

An overview of evolutionary biology as the discipline uniting all of the life sciences. Reading and discussion of scientific papers to explore the dynamic aspects of evolutionary biology. Principles of population genetics, paleontology, and systematics; application of evolutionary thinking in disciplines such as developmental biology, ecology, microbiology, molecular biology, and human medicine.

EEB 2228b, Ecology and Evolution of Infectious Diseases. Vanessa Ezenwa & Paul Turner. TTh 10:30am-11:20am

Overview of the ecology and evolution of pathogens (bacteria, viruses, protozoa) and their impact on host populations. Topics include theoretical concepts, ecological and evolutionary dynamics, molecular biology, and epidemiology of ancient and emerging diseases.

Prerequisite: BIOL 1040 or permission of instructor.

EEB 2230a, Field Ecology. Linda Puth. T 1pm-1:50pm & Th 1pm-5pm

A field-based introduction to ecological research. Experimental and descriptive approaches, comparative analysis, and modeling are explored through field and small-group projects. Students design and complete group projects, for which they prepare a group project report and presentation. We visit a variety of representative local ecosystems including forests, lakes, a salt marsh, a traprock ridge and rocky intertidal ecosystems.

Concurrently with or after EEB 2220 (General Ecology) or with instructor permission.

One field trip at a non-standard meeting time.

EEB 2269, Bird Behavior. Richard Prum. T 1:30pm-3:20pm

A seminar discussion of classic and recent scientific literature on topics in bird behavior. Students develop experience in critical reading of the literature through the exploration of topics in bird behavior including courtship, breeding behavior, song and song learning, foraging ecology, migration and orientation, and sensory ecology.

Prerequisite: BIOL 1040 or permission of the instructor.

EEB 2275a / EVST 3400a, Biological Oceanography. Mary Beth Decker. MW 1pm-2:15pm

Exploration of oceanic ecosystems and how these environments function as coupled physical/biological systems. Ocean currents and other physical processes determine where nutrients are available to support primary production and where organisms from plankton to top predators occur. Includes discussion of anthropogenic impacts, such as the effects of fishing and climate change on marine ecosystems.

EEB 2280a, Ecology and Evolution of Marine Vertebrates. Joshua Moyer. MW 11:35am-12:50pm

Fishes, reptiles, and mammals all include species that spend all or much of their lives in or near the ocean. In this course, we survey those taxa, paying particular attention to how the biotic and abiotic aspects of marine environments have shaped organismal morphology, physiology, and behavior. Students learn about the biology of marine fishes as well as extinct marine reptiles, modern sea turtles and sea snakes, shore birds, and whales and their relatives. This course includes discussions of the conservation challenges facing each group. Because of our location and the deep historical connection our region has to fisheries, including the whaling industry of the eighteenth and nineteenth centuries, we emphasize the marine vertebrates of New England and the Mid-Atlantic coasts. This course includes a mandatory field trip to a regional aquarium or local shoreline.

Prerequisite: Students are strongly encouraged to have taken the introductory biology sequence (BIOL 1010 to 1040) or have the equivalent understanding of biology, evolution, and ecology.

EEB 2290b, Comparative Anatomy of the Vertebrates. Joshua Moyer. MWF 11:35am-12:25pm

A survey of the development, structure, and evolution of major vertebrate groups. Topics include the micro-anatomy of major organ systems, the developmental underpinnings of the vertebrate body plan, and the development, structure, and evolution of the major organ systems such as the locomotory system, sensory organs, digestive tract, reproductive tract, and nervous system.

EEB 2295a. Life in Motion: Ecological and Evolutionary Physiology. Martha Muñoz. MW 9am - 10:15am.

Physiology is the study of the functions that organisms perform and how they use those functions to interact with the environment. To survive, grow, and reproduce, all organisms must acquire energy and avoid conditions that exceed their physiological limits. These interactions all involve motion—ions traveling across membranes, muscle fibers twitching, respiration, and locomotion, to name a few. In this course, we tackle physiological processes from both "bottom up" and "top down" approaches, with integration among these dimensions, to extract general physiological rules of life. Then, we link our discoveries to the broader context of ongoing global change, and consider whether and how organisms can physiologically respond to contemporary selective pressures. While the course focuses heavily on animal physiology, plants, fungi, and microbes are also featured.

Prerequisites: BIOL 1010, 1010, 1030, 1040, and CHEM 1610, or permission of the instructor.

Laboratories

EEB 223Lb/EEB 523Lb, Laboratory for Principles of Ecology, Evolutionary Biology, and the Tree of Life. Linda Puth. T or W 1:30pm-4:30pm

Study of evolutionary novelties, their functional morphology, and their role in the diversity of life. Introduction to techniques used for studying the diversity of animal body plans. Evolutionary innovations that have allowed groups of organisms to increase their diversity. ½ credit.

EEB 2256La, Laboratory for Invertebrates. Th 1:30pm-4:30pm

The study of invertebrate anatomy and diversity in a laboratory and field setting. Activities will include examining live animals and museum specimens, as well as local field trips. Some field trips will fall on weekends. This lab must be taken concurrently with the lecture EEB 2255. ½ credit.

EEB 2265Lb, Laboratory for Ichthyology. Thomas Near. W 1:30pm-4:30pm

Laboratory and field studies of fish diversity, form, function, behavior, and classification. The course primarily involves study of museum specimens and of living and fossil fishes. Must be taken concurrently with EEB 2264. ½ credit.

EEB 2291Lb, Laboratory for Comparative Developmental Anatomy of Vertebrates. Joshua Moyer. Th or F 1:30pm – 4:30pm

Microscopic examination of histological and embryological preparations. Dissection of selected vertebrate species including shark, bony fish, frog, lizard, and rat. Must be taken concurrently with EEB 2290. ½ credit.

EEB 3343La, Ecosystem Measurements for Conservation and Restoration. Annise Dobson. T 12pm-4pm

This course familiarizes students with how ecology is used on the ground for conservation. It is structured in two parts: The first part of the class will be dedicated to active hands-on learning where students obtain formal training in broad range of field and lab methods and analyses used in ecological field research. Topics covered include carbon stock measurement, biodiversity assessment, utilization of digital conservation resources, experimental design, sampling methodology, and statistical analysis. The course includes intensive field exercises focused on forest measurements and soil analysis that ecologists use to understand ecosystem function. The second component of the course allows students to use these skills to design, conduct, analyze and present data in the form of a rapid ecological assessment or group research project on a local property of conservation importance.

Prerequisites: BIOL 1040 or instructor permission. ½ credit.

Advanced Courses

[EEB 3305/EEB 5705, Plant Ecology].

[EEB 3320/EEB 5620, Community Ecology.]

[EEB 3321/EEB 5621, Philosophy of Biology].

[EEB 3322/EEB 5622, Evolutionary Genetics].

[EEB 3325/EEB 5625, Limnology].

[EEB 3326/EEB 5626, Plant Structure and Function].

[EEB 3330/EEB 5620/EVST 3330, Ecosystem Ecology].

[EEB 3335/HLTH 2500/EEB 5635, Evolution and Medicine].

[EEB 3336/HUMS 3360/HSHM 4530, Culture and Human Evolution.]

EEB 3340a, Microbial Ecology. Martina Dal Bello. TTh 9am-10:15am

When thinking about microbes what comes to mind are usually diseases and unpleasant smells from the fridge or the basement. Nevertheless, microbes and the communities they form are key contributors to our wellbeing and the functioning of the planet. This course provides an introduction to microbial ecology, with an emphasis on how microbial systems differ from their macroscopic counterparts, including defining a microbial species; sampling/experimenting with microbes; principles of microbial growth, metabolism, and death; species interactions and community assembly in different environments; microbial community functions; elements of microbial evolution.

BIOL 1010, BIOL 1020, BIOL 1030, & BIOL 1040. General Ecology EEB 2220 and MCDB 2900 are encouraged but not required.

[EEB 3342/EEB 5842/ANTH 3435/ANTH 8435, Primate Diversity and Evolution].

EEB 3464a,b/ANTH 4564a,b/ANTH 8513a,b/ARCG 4564a,b/ARCG 8513a,b, Human Osteology. Eric Sargis TTh 1pm-2:15pm

A lecture and laboratory course focusing on the characteristics of the human skeleton and its use in studies of functional morphology, paleo demography, and paleopathology. Laboratories familiarize students with skeletal parts; lectures focus on the nature of bone tissue, its biomechanical modification, sexing, aging, and interpretation of lesions.

[EEB 3354a/EEB 5654a, Phylogenetic Biology].

[EEB 3362, Tropical Field Biology].

EEB 3375a, Topics in Vertebrate Ecomorphology. Joshya Moyer. MW 1pm-2:15pm

Ecomorphology is a field that bridges ecology and evolutionary biology. Researchers studying organisms' ecomorphology ask questions like, "What does the morphology of an organism tell us about its relationship with its environment" and "How are correlations between morphology and ecology influenced by behavior?" The answers to questions like these inform evolutionary hypotheses based on natural selection and help to explain the amazing diversity of life forms that surround us. In this course, we explore the links between organismal form, function, ecology, and evolution using a series of readings and guided discussions. Students also learn many of the fundamentals associated with crafting and revising publishable scientific writing–a must for those

seeking research-based graduate education in the sciences. By the end of the semester, students refine their critical thinking and scientific writing skills, and they have a newfound awareness of one of the most integrative and fascinating branches of vertebrate biology.

Prerequisites: BIOL 1010, 1020, 1030, and 1040

[EEB 3380/EEB 5680, Life History Evolution,]

EEB Independent Research and Tutorials

EEB 4469a,b. Tutorial. Annise Dobson

Individual or small-group study for qualified underclass students who wish to investigate an area of ecology or evolutionary biology not presently covered by regular courses. A student must be sponsored by a faculty member who sets requirements and meets with the student. A term paper is required at the end of the semester. To register, the student must submit a written plan of study (proposal) approved by the faculty instructor, as well as Research Coordinator Annise Dobson. Students are encouraged to apply during the term preceding the tutorial by registering and submitting a pre-proposal. Students' final proposals must be submitted no later than the first 10 days of the term in which the student begins the tutorial. The final paper is due in the hands of the faculty instructor and the Research Coordinator by the last day of the reading period in the term of enrollment. In special cases, with approval of the director of undergraduate studies, this course may be elected for more than one term. Normally, faculty sponsors must be members of the EEB department. Underclassmen will receive one credit and a grade of P/F.

EEB 4470a,b. Senior Tutorial. Annise Dobson

Tutorial for seniors in the B.A. degree program who elect a term of independent study to complete the senior requirement. Individual or small-group study for qualified students who wish to investigate an area of ecology or evolutionary biology not presently covered by regular courses. A student must be sponsored by a faculty member who sets requirements and meets weekly with the student. A term paper is required at the end of the semester. To register, the student must submit a written plan of study approved by the faculty instructor, as well as Research Coordinator Annise Dobson. Students are encouraged to apply during the term preceding the tutorial by registering and submitting a pre-proposal. Students' final proposals must be submitted no later than the first 10 days of the term in which the student begins the tutorial. The final paper is due in the hands of the faculty instructor and the Research Coordinator by the last day of reading period in term of enrollment. Normally, faculty sponsors must be members of EEB department. Enrollment is limited to seniors. Fulfills the senior requirement for B.A. degree.

EEB 4474a,b. Research. Annise Dobson

One term of original research in an area relevant to ecology or evolutionary biology. This may involve, for example, laboratory work, fieldwork, or mathematical or computer modeling. Students may also work in areas related to environmental biology such as policy, economics, or ethics. The research project may not be a review of relevant literature but must be original. In all cases students must have a faculty sponsor who oversees the research and is responsible for the rigor of the project. *An average of 10 hours per week is required*. To register, students are encouraged to apply during the term preceding the research by registering and submitting a preproposal. A student's final proposal must be submitted no later than the first 10 days of the term in which the student begins the research, with the faculty mentor's signature of approval. The final research paper is due to both the faculty mentor and Research Coordinator Annise Dobson by the last day of the reading period in the term of enrollment. With the approval of the Director of Undergraduate Studies, this course may be elected for more than one term. Underclassmen will receive one credit and a grade of P/F.

EEB 4475a/4476b. Senior Research. Annise Dobson

Two terms of original research in an area relevant to ecology or evolutionary biology. This may involve, for example, laboratory work, fieldwork, or mathematical or computer modeling. Students may also work in areas related to environmental biology such as policy, economics, or ethics. The research project may not be a review of relevant literature but must be original. In all cases students must have a faculty sponsor who oversees the research and is responsible for the rigor of the project. *An average of 10 hours per week is required*. To register, students are encouraged to apply during the term preceding the research by registering and submitting a preproposal. A student's final proposal must be submitted no later than the first 10 days of the term in which the student begins the research, with the faculty mentor's signature of approval. The final research paper is due to both the faculty mentor and Research Coordinator Annise Dobson by the last day of the reading period in the term of enrollment. Enrollment is limited to seniors. A letter grade with two credits (1 credit per semester) will be awarded. Fulfills the senior requirement for the B.S. degree.

EEB 4495a/4496b. Intensive Senior Research. Annise Dobson

Two terms of intensive original research in an area relevant to ecology or evolutionary biology. This may involve, for example, laboratory work, fieldwork, or mathematical or computer modeling. Students may also work in areas related to environmental biology such as policy, economics, or ethics. The research project may not be a review of relevant literature but must be original. In all cases students must have a faculty sponsor who oversees the research and is responsible for the rigor of the project. *An average of 20 hours per week is required*. To register, students are encouraged to apply during the term preceding the research by registering and submitting a preproposal. A student's final proposal must be submitted no later than the first 10 days of the term in which the student begins the research, with the faculty mentor's signature of approval. The final research paper is due to both the faculty mentor and Research Coordinator Annise Dobson by the last day of the reading period in the term of enrollment. Enrollment is limited to seniors. A letter grade with four credits (2 credits per semester) will be awarded. Fulfills the senior requirement for the B.S. degree.

Graduate Courses and Labs

With permission of the instructor, advanced undergraduates may take graduate courses for credit. If you are interested in one of these, first consult the instructor and then request permission through Yale Course Search registration. For current course descriptions and other information, please use https://courses.yale.edu/.

EEB 6500a & 6501b, Advanced Topics in Ecology & Evolutionary Biology. DGS.

EEB 7712b, Foundations of Ecology. Martina Dal Bello.

EEB 7713a, New Technologies for Biodiversity Monitoring and Conservation. Walter Jetz.

[EEB 7717, Structuralism and Macroevolution.]

[EEB 7721, Foundations of Terrestrial Ecology.]

[EEB 7724, Soft Skills Development.]

[EEB 7725, Scientific Writing for Ecology & Evolutionary Biology.]

[EEB 7729, Microbial Ecology & Evolution.]

[EEB 7662, Ecology of Landforms.]

[EEB 7770, The Modern Synthesis.]

EEB 7820a, Darwinian Thought and Society. Brandon Ogbunu.

EEB 7870a, Ecological Genomics. Jenn Coughlan.

[EEB 7821, Advanced Topics in Philosophy of Biology.]

[EEB 7830, The Ecology of the Great Pandemics.]

[EEB 7842, Primate Diversity and Evolution.]

[EEB 7850, The Macroevolution of Squamates.]

[EEB 7854, The Behavioral Immune System.]

[EEB 7856, Special Topics in the Ecology and Evolution of Infectious Diseases.]

[EEB 7865, Evolutionary Architects: Organisms as Targets and Agents of Natural Selection.]

[EEB 7872, Speciation and Adaptation Genomics.]

[EEB 7875, Phenotypic Plasticity and Evolution]

EEB 7930a, Seminar in Systematics. Jacques Gauthier

2025 Senior Projects

Presenter and Title	Faculty Advisor
Walker Bargmann The Evolutionary Origins of the Human Mind: A Comparative Literature Review on Primate Mental State Representations of Intentions, Knowledge, and Beliefs	Laurie Santos
Sophie Dauerman With No Rain On the Horizon: Integrated Drought Response in the Atacama Desert Plant *Cistanthe cachinalensis*	Erika Edwards
Hasfa Fazl Standardizing SLEAP Analysis for Accurate Seizure Behavior Detection in *Xenopus*	Saquib Lakhani
Raymond Fedrick Investigating Genomic Variation between *Physalia physalis* Populations across the Atlantic	Casey Dunn
Molly Hill Cultural Contact and Dialects in Introduced *Amazona* Parrots	Richard Prum
Jon Jazwinski Tracing the Origin of Invasive *Aedes albopictus* Mosquitoes: Examining the Population Structure and Origins of Invasive Populations in Africa and the Indian Ocean Using SNPs	Adalgisa Caccone
Abby Jolteus Spatial Atlas of Small Intestinal Tissue of Infants with Spontaneous Intestinal Perforation	Oluwabunmi Olaloye
Maya Li Signaling Behaviors in Three Species of Anolis Lizards	Martha Muñoz
Kemper Lowry The Prevalence of "Context Dependency" in Scientific Literature	Brandon Ogbunu
Nyla McGill Genomic Analysis and Distribution of Melanism in Eastern Gray Squirrels (*Sciurus carolinensis*) across Metropolitan Areas	Adalgisa Caccone
Liya Miksovsky The Evolution of Cheating in Viruses	Paul Turner
Benjamin Mousseau The Origin of Life: From Prebiotic Precursors to LUCA	Casey Dunn
Olivia Muhn Maternal Effects in Phage Reproduction and Infection	Paul Turner
Kennedy Odiboh Measuring the Alignment of the Effects of Social Hierarchy on Cortisol Levels Between Humans and Rhesus Macaques	Amanda Dettmer

David Vasseur

Kai Padilla-Smith
Dimensionality and Stability of Trophic Networks: Are Simple Food Webs More Stable?

Diego Ramirez — Casey Dunn
Integrating Cryptic Diversity and Functional Morphology in Siphonophore Genuses *Physalia* and *Bargmannia*

Angie Sanchez — Simon Queenborough
Low-Intensity Selective Logging Found Not to Alter Species Richness or Aboveground Biomass-Ecosystem Function Relationships in Gabon's Tropical Forests

Ally Sirignano — Casey Dunn
Endosymbiosis Among Marine Organisms

Yuyang Sun — David Vasseur
Do Endosymbionts Improve Thermal Resilience in *Paramecium bursaria*?

Abigail Taylor — Jennifer Coughlan
F1 Male, Female Sterility in *Guttatus*-Wide Crossing Survey

Alika Ting — Michelle Wong
Root Exudation Patterns in Response to Nutrient Levels: Exploring carbon dynamics in temperate forest trees

Abe Tolkoff — Paul Turner
Genetic Effects of the Community Context on Jumbo Phage-Driven Bacterial Evolution

Kalisa Vasquez-Minas — Annise Dobson, Marta Wells
Interactions Between Fire and Invasive Plants and the Implications of Climate Change on Biodiversity in California Shrublands

Elizabeth Watson — Paul Turner
Characterizing the Gut Microbiomes of Captive Beluga Whales

Andy Wong — Thomas Loreng & Robert Braun
A Descriptive Analysis of Resident Composition, Facility Characteristics, and Financial Rural and Non-Rural Nursing Homes Before and After the Onset of the COVID-19 Pandemic

Brian Zhang — Eric Sargis
Postcranial Skeletal Variation in Marmots (*Rodentia: Sciuridae: Marmota*)

Appendix I – Worksheets for EEB

The following pages are worksheets that aid the potential major in planning a course of study.

Bachelor of Arts Biodiversity & the Environment

Bachelor of Arts Organismal Biology

Bachelor of Science Biodiversity & the Environment

Bachelor of Science Organismal Biology

EEB Major Worksheet B.A. Degree B&E Track

Name:

Date:

Class:

College:

Advisor:

Email:

Prerequisites

Biology Introductory Courses			Course	Semester	Grade	Place Out
BIOL 1010	Biochemistry & Biophysics					
BIOL 1020	Principles of Cell Biology & Membrane Physiology					
BIOL 1030	Genes & Development					
BIOL 1040	Principles of Ecology & Evolutionary Biology					

2 terms of General Chemistry	Course	Semester	Grade	Place Out
CHEM 1610 & 1650				
CHEM 1630 & 1670				

2 terms of General Chemistry Labs	Course	Semester	Grade	Place Out
CHEM 1340L				
CHEM 1360L				

1 term of Math or Statistics & Data Science			Course	Semester	Grade	Place Out
MATH 1150	MATH 1200	S&DS 10**				
MATH 1160		S&DS 2300				

4 total credits, no more than two term lecture courses per department			Course	Semester	Grade	# Credit
CHEM 1740 or 2200	MATH 1150 or 1160	S&DS 10**				
CHEM 1750 or 2210	MATH 1180 or 1200	S&DS 2200				
CHEM 2220L	MATH 2220 or 2250	S&DS 2300				
CHEM 2230L	MATH 2300 or 2310	S&DS 2380				
EPS 1100	MATH 2350	S&DS 2400				
EPS 2120	MATH 2410	PHYS 1700 or 1800				
EPS 2200	MATH 2420	PHYS 1710 or 1810				
EPS 2220	MATH 2440	CPSC 1000				
EPS 2320	MATH 2460	CPSC 1001				
EPS 2400	MATH 2470	CPSC 1230				
EPS 2550	MATH 2500	CPSC 2010				
	MATH 2550					

Required Core Courses: B&E Track		Course	Semester	Grade
EEB 2220	General Ecology			
EEB 2225	Evolutionary Biology			
EEB 22** or 33**	Organismal Diversity Lecture			
EEB 22**L or 33**L	Organismal Diversity Lab			

Independent Research for Underclassmen (P/F) (optional, but recommended)		Course	Semester	Grade	Advisor
EEB 4469	Tutorial				
EEB 4474	Research				

B.A. Senior Requirement - choose one. Must be taken in senior year.		Course	Semester	Grade	Advisor
EEB 4470	Senior Tutorial (1 credit)				
****	Senior Essay (0 credit)				

EEB Major Worksheet B.A. Degree O.B. Track

Name:
Date:
Class:
College:
Advisor:
Email:

Prerequisites

Biology Introductory Courses			Course	Semester	Grade	Place Out
BIOL 1010	Biochemistry & Biophysics					
BIOL 1020	Principles of Cell Biology & Membrane Physiology					
BIOL 1030	Genes & Development					
BIOL 1040	Principles of Ecology & Evolutionary Biology					

2 terms of General Chemistry			Course	Semester	Grade	Place Out
CHEM 1610 & 1650						
CHEM 1630 & 1670						

2 terms of General Chemistry Labs			Course	Semester	Grade	Place Out
CHEM 1340L						
CHEM 1360L						

1 term of Math or Statistics & Data Science			Course	Semester	Grade	Place Out
MATH 1150	MATH 1200	S&DS 10**				
MATH 1160		S&DS 2300				

4 total credits, no more than two term lecture courses per department			Course	Semester	Grade	# Credit
CHEM 1740 or 2200	MATH 1150 or 1160	S&DS 10**				
CHEM 1750 or 2210	MATH 1180 or 1200	S&DS 2200				
CHEM 2220L	MATH 2220, 2250 or 2260	S&DS 2300				
CHEM 2230L	MATH 2300 or 2310	S&DS 2380				
EPS 1100	MATH 2350	S&DS 2400				
EPS 2120	MATH 2410	PHYS 1700 or 1800				
EPS 2200	MATH 2420	PHYS 1710 or 1810				
EPS 2220	MATH 2440	CPSC 1000				
EPS 2320	MATH 2460	CPSC 1001				
EPS 2400	MATH 2470	CPSC 1230				
EPS 2550	MATH 2550 or 2560	CPSC 2010				
	MATH 3020					

Required Core Courses: O.B. Track		Course	Semester	Grade
MCDB/MB&B 3000	Biochemistry			
EEB 2295 or BENG 3200	Comparative Physiology or Physiological Systems			
EEB 2290	Comparative Anatomy			
EEB 2291L	Comparative Anatomy Lab			

Independent Research for Underclassmen (P/F) (optional, but recommended)		Course	Semester	Grade	Advisor
EEB 4649	Tutorial				
EEB 4474	Research				

B.A. Senior Requirement - choose one. Must be taken in senior year.		Course	Semester	Grade	Advisor
EEB 4470	Senior Tutorial (1 credit)				
****	Senior Essay (0 credit)				

EEB Major Worksheet B.S. Degree B&E Track

Name:
Date:
Class:
College:
Advisor:
Email:

Prerequisites

Biology Introductory Courses			Course	Semester	Grade	Place Out
BIOL 1010	Biochemistry & Biophysics					
BIOL 1020	Principles of Cell Biology & Membrane Physiology					
BIOL 1030	Genes & Development					
BIOL 1040	Principles of Ecology & Evolutionary Biology					
2 terms of General Chemistry			**Course**	**Semester**	**Grade**	**Place Out**
CHEM 1610 & 1650						
CHEM 1630 & 1670						
2 terms of General Chemistry Labs			**Course**	**Semester**	**Grade**	**Place Out**
CHEM 1340L						
CHEM 1360L						
1 term of Math or Statistics & Data Science			**Course**	**Semester**	**Grade**	**Place Out**
MATH 1150	MATH 1200	S&DS 10**				
MATH 1160		S&DS 2300				

4 total credits, no more than two term lecture courses per department			**Course**	**Semester**	**Grade**	**# Credit**
CHEM 1740 or 2200	MATH 1150 or 1160	S&DS 10**				
CHEM 1750 or 2210	MATH 1180 or 1200	S&DS 2200				
CHEM 2220L	MATH 2220, 2250 or 2260	S&DS 2300				
CHEM 2230L	MATH 2300 or 2310	S&DS 2380				
EPS 1100	MATH 2350	S&DS 2400				
EPS 2120	MATH 2410	PHYS 1700 or 1800				
EPS 2200	MATH 2420	PHYS 1710 or 1810				
EPS 2220	MATH 2440	CPSC 1000				
EPS 2320	MATH 2460	CPSC 1001				
EPS 2400	MATH 2470	CPSC 1230				
EPS 2550	MATH 2550 or 2560	CPSC 2010				
	MATH 3020					

Required Core Courses: B&E Track		**Course**	**Semester**	**Grade**
EEB 2220	General Ecology			
EEB 2225	Evolutionary Biology			
EEB 22xx or 32xx	Organismal Diversity Lecture			
EEB 22xxL or 32xxL	Organismal Diversity Lab			

Required Electives: B&E Track	**Course**	**Semester**	**Grade**
2 terms of science electives: choose from 2000+ level lecture courses in EEB,			
MCDB, or MB&B; 2000+ level science labs, or other dept. with DUS approval			

Independent Research for Underclassmen (P/F) (optional, but recommended)		**Course**	**Semester**	**Grade**	**Advisor**
EEB 4469	Tutorial				
EEB 4474	Research				

B.S. Senior Requirement - 2 terms required in senior year		**Course**	**Semester**	**Grade**	**Advisor**
EEB 4475 & 4476	Senior Research (1 credit each)				
EEB 4495 & 4496	Intensive Senior Research (2 credits each)				

EEB Major Worksheet B.S. Degree O.B. Track

Name:
Date:
Class:
College:
Advisor:
Email:

Prerequisites

Biology Introductory Courses			Course	Semester	Grade	Place Out
BIOL 1010	Biochemistry & Biophysics					
BIOL 1020	Principles of Cell Biology & Membrane Physiology					
BIOL 1030	Genes & Development					
BIOL 1040	Principles of Ecology & Evolutionary Biology					

2 terms of General Chemistry			Course	Semester	Grade	Place Out
CHEM 1610 & 1650						
CHEM 1630 & 1670						

2 terms of General Chemistry Labs			Course	Semester	Grade	Place Out
CHEM 1340L						
CHEM 1360L						

1 term of Math or Statistics & Data Science			Course	Semester	Grade	Place Out
MATH 1150	MATH 1200	S&DS 10**				
MATH 1160		S&DS 2300				

4 total credits, no more than two term lecture courses per department			Course	Semester	Grade	# Credit
CHEM 1740 or 2200	MATH 1150 or 1160	S&DS 10**				
CHEM 1750 or 2210	MATH 1180 or 1200	S&DS 2200				
CHEM 2220L	MATH 2220, 2250 or 2260	S&DS 2300				
CHEM 2230L	MATH 2300 or 2310	S&DS 2380				
EPS 1100	MATH 2350	S&DS 2400				
EPS 2120	MATH 2410	PHYS 1700 or 1800				
EPS 2200	MATH 2420	PHYS 1710 or 1810				
EPS 2220	MATH 2440	CPSC 1000				
EPS 2320	MATH 2460	CPSC 1001				
EPS 2400	MATH 2470	CPSC 1230				
EPS 2550	MATH 2550 or 2560	CPSC 2010				
	MATH 3020					

Required Core Courses: O.B. Track		Course	Semester	Grade
MCDB/MB&B 3000	Biochemistry			
EEB 2295 or BENG 3200	Comparative Physiology or Physiological Systems			
EEB 2290	Comparative Anatomy			
EEB 2291L	Comparative Anatomy Lab			

Required Electives: O.B. Track	Course	Semester	Grade
2 terms of science electives: choose from 2000+ level lecture courses in EEB,			
MCDB, or MB&B; 2000+ level science labs, or other dept. with DUS approval			

Independent Research for Underclassmen (P/F) (optional but recommended)		Course	Semester	Grade	Advisor
EEB 4469	Tutorial				
EEB 4474	Research				

B.S. Senior Requirement - 2 terms required in senior year		Course	Semester	Grade	Advisor
EEB 4475 & 44476	Senior Research (1 credit each)				
EEB 4495 & 496	Intensive Senior Research (2 credits each)				

Appendix II – Forms for Tutorial & Research Courses

All printed independent tutorial & research forms have been replaced with online versions. The forms may be accessed with the links below, or from the "Forms" tab on the EEB website: eeb.yale.edu/forms.

- Underclass Research & Tutorial Form (EEB 4469 & 4474)
- Senior Research for B.S. (EEB 4475, 4476, 4495, 4496)
- Senior Tutorial for B.A. (EEB 4470)
- Senior Essay for B.A. (No YC Credit)