EVOLUTIONARY BIOLOGY OF THE HUMAN SPECIES

Ecology, Evolution & Environmental Biology :

Department website: http://www.e3b.columbia.edu

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Evolutionary Biology of the Human Species Advisor: Dr. Jill Shapiro, 1011 Schermerhorn Extension; jss19@columbia.edu

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The Study of Ecology, Evolution & Environmental Biology

The Department of Ecology, Evolution & Environmental Biology (E3B) at Columbia University was established in 2001. Although we are a relatively new department, we have grown rapidly in the past decade. We now have an internationally diverse student body and a broad network of supporters at Columbia and throughout New York City. Our affiliated faculty members come from departments at Columbia as well as from the American Museum of Natural History, the New York Botanical Garden, the Wildlife Conservation Society, and the EcoHealth Alliance. Together, we provide an unparalleled breadth and depth of research opportunities for our students.

In creating E3B, Columbia University recognized that the fields of ecology, evolutionary biology, and environmental biology constitute a distinct subdivision of the biological sciences with its own set of intellectual foci, theoretical foundations, scales of analysis, and methodologies.

E3B's mission is to educate a new generation of scientists and practitioners in the theory and methods of ecology, evolution, and environmental biology. Our educational programs emphasize a multi-disciplinary perspective to understand life on Earth from the level of organisms to global processes that sustain humanity and all life.

To achieve this multi-disciplinary perspective, the department maintains close ties to over 70 faculty members beyond its central core. Thus, many faculty members who teach, advise, and train students in research are based in other departments on the Columbia campus or at the partner institutions. Through this collaboration, the department is able to tap into a broad array of scientific and intellectual resources in the greater New York City area. The academic staff covers the areas of plant and animal systematics; evolutionary and population genetics; ecosystem science; demography and population biology; behavioral and community ecology; and related fields of epidemiology, ethnobiology, public health, and environmental policy. Harnessing the expertise of this diverse faculty and the institutions of which they are a part, E3B covers a vast area of inquiry into the evolutionary, genetic, and ecological relationships among all living things.

Student Advising

Consulting Advisers

Enrolling in Classes

Preparing for Graduate Study

Coursework Taken Outside of Columbia

Advanced Placement

Barnard College Courses

Transfer Courses

Study Abroad Courses

Summer Courses

Undergraduate Research and Senior Thesis

Undergraduate Research in Courses

Senior Thesis Coursework and Requirements

Undergraduate Research Outside of Courses

Department Honors and Prizes

Department Honors

Academic Prizes

Other Important Information

Professors

Marina Cords (also Anthropology)
Ruth DeFries (also Climate School)
Maria Diuk-Wasser
Kevin Griffin (also Earth and Environmental Sciences)
Shahid Naeem
Dustin Rubenstein
María Uriarte

Associate Professors

Duncan Menge

Assistant Professors

Andrés Bendesky
Deren Eaton

Lecturers

Bekka Brodie
Matthew Palmer
Jill Shapiro

Adjunct Faculty/Research Scientists

Columbia University

Hilary Callahan (Barnard Biology)
Steven Cohen (SIPA)
Lisa Dale

Adela Gondek (SIPA)
Paul Hertz (Barnard)
Darcy Kelley (Biology)
Allison Lopatkin (Barnard Biology)
Alba Morales-Jimenez
Brian Morton (Barnard Biology)
Paul Olsen (Lamont-Doherty)
Dorothy Peteet (Lamont-Doherty)
Miguel Pinedo Vasquez
Alison Pischedda (Barnard Biology)
Robert Pollack
Marya Pollack
Paige West (Barnard)
Natalie Boelman (Lamont-Doherty)

American Museum of Natural History

Felicity Arengo
Mary Blair
Frank Burbrink
Joel Cracraft
Suzanne Macey
Anna MacPherson
Christopher Raxworthy
Robert Rockwell
Nancy Simmons
Brian Smith
Jessica Ware

The New York Botanical Garden

Alex McAlvay
Michael Balick
Dennis Stevenson

Wildlife Conservation Society

Howard Rosenbaum
Scott Silver
Patrick R. Thomas

Ecohealth Alliance

Peter Daszak
Kevin Olival
Mindy Rostal

Others

Rachel Cox (Riverdale Country School)

Winslow Hansen (Cary Institute)

Sara Kross (University of Canterbury)

Chad Seewagen (Great Hollow)

Eleanor Sterling (Hawai'i Institute of Marine Biology)

Guidance for Undergraduate Students in the Department

Program Planning for all Students

Course Numbering Structure

Guidance for First-Year Students

Guidance for Transfer Students

Undergraduate Programs of Study

The grade of D is not accepted for any course offered in fulfillment of the requirements toward the majors or concentrations.

Major in Environmental Biology

The major in environmental biology requires 50 points, distributed as follows:

Lower Division Courses

Two terms of introductory or environmental biology such as the following:	
EEEB UN2001 - EEEB UN2002	ENVIRONMENTAL BIOLOGY I and ENVIRONMENTAL BIOLOGY II
Two terms of environmental science such as the following:	
EESC UN2100	EARTH'S ENVIRO SYST: CLIM SYST
EESC UN2200	EARTH'S ENVIRONMENTAL SYSTEMS: THE SOLID EARTH
Two terms of chemistry such as the following:	
CHEM UN1403 - CHEM UN1404	GENERAL CHEMISTRY I-LECTURES and GENERAL CHEMISTRY II-LECTURES
One term of physics such as the following:	
PHYS UN1201	GENERAL PHYSICS I
One term of statistics such as the following:	
EEEB UN3005	INTRO-STAT-ECOLOGY # EVOL BIOL
BIOL BC2286	Statistics and Research Design
STAT UN1101	INTRODUCTION TO STATISTICS
STAT UN1201	CALC-BASED INTRO TO STATISTICS
One term of calculus such as the following:	
MATH UN1101	CALCULUS I
MATH UN1102	CALCULUS II
MATH UN1201	CALCULUS III
MATH UN1202	CALCULUS IV

Upper Division Courses

Students must complete five advanced elective courses (generally *3000*-level or above) satisfying the following distribution. At least one of these courses must include a laboratory component. For more information and a list of appropriate courses, contact the director of undergraduate studies.

1. Ecology, behavior, or conservation biology;
2. Evolution or genetics;
3. Morphology, physiology, or diversity;
4. Policy or economics;
5. One additional course from the preceding four groups.

Students must also complete a senior thesis, which involves completing a research internship (generally in the summer before the senior year) and completing at least one semester of the thesis research seminar, EEEB UN3991- EEEB UN3992 THESIS RESEARCH SEMINAR. Enrollment

in both semesters of the seminar, starting in the spring of the junior year, is recommended.

Students planning on continuing into graduate studies in environmental biology or related fields are encouraged to take organic chemistry and genetics.

Ecology and Evolution Track within the Environmental Biology Major

The ecology and evolution track within the environmental biology major requires 50 points, distributed as follows:

Lower Division Courses

Two terms of introductory or environmental biology such as the following:	
EEEB UN2001 - EEEB UN2002	ENVIRONMENTAL BIOLOGY I and ENVIRONMENTAL BIOLOGY II
Two terms of chemistry such as the following:	
CHEM UN1403 - CHEM UN1404	GENERAL CHEMISTRY I-LECTURES and GENERAL CHEMISTRY II-LECTURES
Chemistry laboratory such as the following:	
CHEM UN1500	GENERAL CHEMISTRY LABORATORY
Two terms of physics such as the following:	
PHYS UN1201 - PHYS UN1202	GENERAL PHYSICS I and GENERAL PHYSICS II
One term of statistics such as the following:	
EEEB UN3005	INTRO-STAT-ECOLOGY # EVOL BIOL
BIOL BC2286	Statistics and Research Design
STAT UN1101	INTRODUCTION TO STATISTICS
STAT UN1201	CALC-BASED INTRO TO STATISTICS
Two terms of calculus, or one term of calculus and second advanced course in math or statistics such as the following:	
MATH UN1101	CALCULUS I
MATH UN1102	CALCULUS II
MATH UN1201	CALCULUS III
MATH UN1202	CALCULUS IV

Upper Division Courses

Students must complete five advanced elective courses (generally *3000*-level or above) satisfying the following distribution. At least one of these courses must include a laboratory component. For more information and a list of appropriate courses, contact the director of undergraduate studies.

1. Three courses in ecology, evolution, conservation biology, or behavior;
2. One course in genetics. BIOL UN3031 GENETICS or BIOL BC2100 MOLECULAR # MENDELIAN GENETICS is recommended;
3. One course in morphology, physiology, or diversity.

Students must also complete a senior thesis, which involves completing a research internship (generally in the summer before the senior year) and completing at least one semester of the thesis research seminar, EEEB UN3991-EEEB UN3992 THESIS RESEARCH SEMINAR. Enrollment in both semesters of the seminar, starting in the spring of the junior year, is recommended.

Students planning on continuing into graduate studies in ecology or evolutionary biology are encouraged to take organic chemistry.

Major in Evolutionary Biology of the Human Species

The major in evolutionary biology of the human species requires 36 points, distributed as described below.

Students must take a minimum of 20 points from approved biological anthropology courses. The additional courses may be taken in other departments with adviser approval. These include up to 6 points of introductory biology/chemistry or calculus (in any combination). Please speak with the major adviser about the extended list of courses from related areas including Biology, Psychology, Archaeology, Anthropology, Earth and Environmental Science, and Statistics that count toward this program.

For example, students interested in focusing on paleoanthropology would complement the requirements with additional courses in human evolution and morphology, evolutionary biology and theory, archaeology, genetics, and statistics. Those interested in primate behavior would supplement the requirements with classes in behavioral biology, ecology, and statistics.

Required Courses

EEEB UN1010	HUMAN ORIGINS # EVOLUTION
EEEB UN1011	BEHAVIOR BIOL-LIVING PRIMATES

****Alternate options may be possible for all courses other than EEEB UN1010 HUMAN ORIGINS # EVOLUTION and EEEB UN1011 BEHAVIOR BIOL-LIVING PRIMATES. These will be considered on an individual basis in consultation with the major/concentration adviser.**

Conservation Course

EEEB UN3240	Challenges and Strategies of Primate Conservation (This is the recommended conservation course but this requirement can be fulfilled with other classes such as Conservation Biology, Zoo Consevation, Ecology, Behavior and Conservation of Mammals, SEE-U in Jordan or Brazil, or other relevant offerings.)

Theoretical Foundation from Archaeology

Select one course of the following: Nearly all archaeology courses (save for Rise of Civilization) can fulfill this requirement. Check with the advisor.

Archaeology	
ANTH UN1007	THE ORIGINS OF HUMAN SOCIETY
ANTH UN2028	THINK LIKE AN ARCHAEOLOGIST
ANTH UN3064	Death and the Body
ANTH UN3823	ARCH ENGAGE: PAST IN PUB EYE

Breadth Requirement

Select a minimum of one course from each of the three sections (may overlap seminar requirement for majors):

Genetics/Human Variation	
BIOL BC2100	MOLECULAR # MENDELIAN GENETICS

BIOL UN3031	GENETICS
BIOL GU4560	EVOL IN THE AGE OF GENOMICS
ANTH UN3970	BIOL BASIS OF HUMAN VARIATION
EEEB GU4340	HUMAN ADAPTATION
EEEB GU4700	RACE:TANGLED HIST-BIOL CONCEPT
Primate Behavioral Biology and Ecology	
EEEB UN3940	Current Controversies in Primate Behavior and Ecology
BIOL BC2272	ECOLOGY
BIOL BC2280	ANIMAL BEHAVIOR
PSYC UN2420	ANIMAL BEHAVIOR
PSYC BC1119	Systems and Behavioral Neuroscience
PSYC UN2450	BEHAVIORAL NEUROSCIENCE
PSYC BC3372	Comparative Cognition
PSYC UN3450	Evolution of Intelligence, Animal Communication, # Language
PSYC UN3460	Evolution of Behavior (Seminar)
PSYC UN3470	Brain Evolution: Becoming Human (Seminar)
EEEB GU4010	The Evolutionary Basis of Human Behavior
EEEB GU4134	Behavioral Ecology
EEEB GU4201	ECO, BEHAVIOR # CONSERVATION OF MAMMALS (can count for either breadth requirement or conservation requirement, but not both)
Human Evolution/Morphology	
EEEB UN3208	EXPLORATIONS IN PRIM ANATOMY
EEEB UN3215	FORENSIC OSTEOLOGY
EEEB UN3220	THE EVOL OF HUM GROWTH # DEVPT
ANTH GU4147	Human Skeletal Biology I
ANTH GU4148	HUMAN SKELETAL BIOLOGY II
EEEB UN3204	Dynamics of Human Evolution
EEEB UN3910	THE NEANDERTALS
ANTH GU4002	Controversial Topics in Human Evolution
ANTH GU4200	FOSSIL EVIDENCE FOR HUMAN EVOL
BIOL BC2278	Evolution
BIOL UN3208	Introduction to Evolutionary Biology
EEEB UN3030	The Biology, Systematics, and Evolutionary History of the 'Apes'
BIOL BC2262	Vertebrate Biology
BIOL UN3006	PHYSIOLOGY
BIOL BC3360	PHYSIOLOGY
EEEB GU4200	Introduction to Mammalogy

Seminar

Selection at least one of the following seminars. May also count toward the breadth requirement.

EEEB UN3204	Dynamics of Human Evolution
EEEB UN3910	THE NEANDERTALS
EEEB UN3940	Current Controversies in Primate Behavior and Ecology
ANTH UN3970	BIOL BASIS OF HUMAN VARIATION
EEEB UN3993 - EEEB UN3994	EBHS SENIOR THESIS SEMINAR and EBHS SENIOR THESIS SEMINAR
EEEB GU4321	HUM NATURE:DNA,RACE # IDENTITY
ANTH GU4002	Controversial Topics in Human Evolution (Fulfills the seminar requirement for the major)

Additional courses in the student's area of focus to complete the required 36 points overall including a minimum of 20 points of approved biological anthropology courses.

Students intending to pursue graduate study in this field should broaden their foundation by taking an introductory biology course (optimally either EEEB UN2001 ENVIRONMENTAL BIOLOGY I or EEEB UN2002 ENVIRONMENTAL BIOLOGY II) or an advanced evolution course, a genetics course, and a statistics course. We recommend that those interested in either biological anthropology or bioarchaeology take a foundation cultural anthropology course such as ANTH UN1002 THE INTERPRETATION OF CULTURE, ANTH UN2004 INTRO TO SOC # CULTURAL THEORY, ANTH UN2005 THE ETHNOGRAPHIC IMAGINATION, or ANTH UN3040 ANTHROPOLOGICAL THEORY. Students interested in forensic anthropology should take chemistry in lieu of of biology (though the latter is recommended as a foundation course for all students). The adviser makes additional recommendations dependent on the student's area of focus.

Approved Biological Anthropology Courses

Paleoanthropology and Morphology	
EEEB UN1010	HUMAN ORIGINS # EVOLUTION
EEEB UN3204	Dynamics of Human Evolution
EEEB UN3208	EXPLORATIONS IN PRIM ANATOMY
EEEB UN3215	FORENSIC OSTEOLOGY
EEEB UN3220	THE EVOL OF HUM GROWTH # DEVPT
EEEB UN3910	THE NEANDERTALS
ANTH GU4147 - ANTH GU4148	Human Skeletal Biology I and HUMAN SKELETAL BIOLOGY II
ANTH GU4200	FOSSIL EVIDENCE FOR HUMAN EVOL taught intermittently
Primate Behavioral Ecology and Evolution	
EEEB UN1011	BEHAVIOR BIOL-LIVING PRIMATES
EEEB UN3030	The Biology, Systematics, and Evolutionary History of the 'Apes'
EEEB UN3940	Current Controversies in Primate Behavior and Ecology
EEEB GU4010	The Evolutionary Basis of Human Behavior
Human Variation	
ANTH UN3970	BIOL BASIS OF HUMAN VARIATION
EEEB GU4340	HUMAN ADAPTATION
EEEB GU4700	RACE:TANGLED HIST-BIOL CONCEPT
Additional Courses	
EEEB UN3240	Challenges and Strategies of Primate Conservation
EEEB UN3993 - EEEB UN3994	EBHS SENIOR THESIS SEMINAR and EBHS SENIOR THESIS SEMINAR

MINOR IN ECOLOGY, EVOLUTION, AND ENVIRONMENTAL BIOLOGY

Beginning in fall 2024 E3B is pleased to announce a new minor in Ecology, Evolution, and Environmental Biology. This minor provides both grounding in the intellectual pillars of the department while

affording students the option to explore the broad scope of biodiversity, ecosystems, and environmental and evolutionary biology. Students may also delve into specific subfields such as conservation biology, botany, behavioral biology and ecology, ecosystem ecology, primatology, or human evolution. No previous biology background is required. Ideally, students will take one course by the end of their second year to see if the program is of interest, but juniors and even seniors who develop a curiosity in the subject may complete the minor without difficulty.

Advising: Contact the Directors of Undergraduate Programs. Matt Palmer mp2434@columbia.edu (mp2434@columbia.edu) advises students who have a broad organismal/ecosystem focus corresponding to interests in the EB program; Jill Shapiro jss19@columbia.edu advises students with a focus on human and non-human primate evolutionary biology and behavior, corresponding to the EBHS program. In addition to the program advisors, guidance as to offerings and a complete list of courses including prerequisites is available on the E3B website.

REQUIRED COURSES

Minors must take one of the following four introductory courses and any other four 3-4 points E3B courses (this includes the other introductory classes).

EEEB UN2001 Environmental Biology 1 (offered every fall)

EEEB UN2002 Environmental Biology 2 (offered every spring)

EEEB UN1010 Human Origins and Evolution (offered every fall)

EEEB UN1011 Behavioral Biology of Living Primates (offered every spring)

The four introductory offerings are “gateway” classes. We recommend that students interested broadly in organismal biology/environmental biology take either Environmental Biology 1 or 2, or both. Those with a focus on human and non-human primate evolutionary biology and behavior should take either Human Origins and Evolution or Behavioral Biology of Living Primates. This will maximize the number of upper-level courses that would be open but there is still considerable flexibility. There are a small number of classes without any prerequisites and students with foundational biology courses from either Columbia or Barnard Biology may fulfill some class prerequisites*. Advisors will provide guidance as to offerings and a complete list of courses including prerequisites is available on the E3B website.

*BIOL2005/2006 and Barnard BIO BC1501 are similar to EEEB2001 (Environmental Biology 1) and may substitute this for courses requiring the latter as a prerequisite, but must take five other courses in E3B. Since the BIOL sequence does not include evolution (in contrast to EB1) we highly recommend that they take Environmental Biology 2 or one of the other foundation courses. Barnard BIO BC1500 is similar to Environmental Biology 2 and so students who have completed this can count it as having satisfied the introductory course requirement, and so can take any five courses in E3B to complete the minor.

COURSE OPTIONS

UN3001 Saga of Life

UN3005 Intro Statistics Ecology and Evolutionary Biology

UN3087 Conservation Biology

UN3204 Dynamics of Human Evolution

UN3208 Explorations Primate Anatomy

UN3215 Forensic Osteology

UN3220 Evolution of Human Growth and Evolution

UN3240 Primate Conservation

UN3910 The Neandertals

UN3940 Current Controversies in Primate Behavior

UN3970 Biological Basis of Human Variation

UN3919 Trading Nature

UN3997 Independent Study

UN3998.002 Group Independent Study in Postcranial Osteology

GU4015 Animal Communication: A Primate Perspective

GU4050 Programming and Data Science Skills

GU4055 Principles and Applications in Modern DNA Sequencing

GU4065 Tropical Biology (Winter Break Course in Kenya)

GU4086 Ethnobotany

GU4100 Forest Ecology

GU4105 Intermediate Statistics for Ecology and Evolution

GU4111 Ecosystem Ecology and Global Change

GU4112 Ichthyology

GU4126 Conservation Genetics

GU4127 Disease Ecology

GU4129 Zoo Conservation

GU4134 Behavioral Ecology

GU4135 Urban Ecology and Design

GU4140 Ornithology

GU4150 Theoretical Ecology

GU4160 Landscape Ecology

GU4192 Introduction to Landscape Analysis

GU4195 Marine Conservation

GU4200 Introduction to Mammalogy

GU4201 Ecology, Behavior and Conservation of Mammals

GU4210 Herpetology

GU4340 Human Adaptation

GU4350 Primate Sexuality

GU4370 Parenting Like a Primate: the Evolution of Parental Care

GU4550 Plant Ecophysiology

GU4605 Human-Wildlife Conflict

GU4650 Biodiversity and Ecosystem Processes

GU4666 Insect Diversity

GU4670 Introduction to GIS

GU4700 Race: The Tangled History of a Biological Concept

GU4910 Field Botany and Plant Systematics

Summer Only:

S1001 Biodiversity

S1115 The Life Aquatic

S3015 Animal Behavior Through Fieldwork

With advisor approval, students may take a maximum of two courses from a limited set taught by affiliates in other departments. For example: DEES GU4560 The Ecology of Tree line in a Changing Climate; BIOL-BC2240 Plant Evolution and Diversity; BIOL/ANAT BC2574-Laboratory in Human Anatomy; BIOL-BC2272 Ecology; and BIOL BC-3380-Applied Ecology and Evolution.

Examples of focused programs (e.g., biodiversity, botany, conservation, ecology, evolutionary biology, human evolution & morphology, primatology, zoology, etc., available on the E3B Department website https://e3b.columbia.edu/

For students who entered Columbia in or before the 2023-24 academic year

Concentration in Environmental Biology

The concentration in environmental biology differs from the major in omitting calculus and physics from the lower division, requiring three advanced electives rather than five, and omitting the senior seminar with thesis project. It requires 36 points, distributed as follows:

Lower Division Courses

Two terms of introductory or environmental biology such as the following:	
EEEB UN2001 - EEEB UN2002	ENVIRONMENTAL BIOLOGY I and ENVIRONMENTAL BIOLOGY II (or equivalents)
Two terms of environmental science such as the following:	
EESC UN2100	EARTH'S ENVIRO SYST: CLIM SYST
EESC UN2200	EARTH'S ENVIRONMENTAL SYSTEMS: THE SOLID EARTH
Two terms of chemistry such as the following:	
CHEM UN1403 - CHEM UN1404	GENERAL CHEMISTRY I-LECTURES and GENERAL CHEMISTRY II-LECTURES
One term of statistics. Select one of the following:	
EEEB UN3005	INTRO-STAT-ECOLOGY # EVOL BIOL
BIOL BC2286	Statistics and Research Design
STAT UN1101	INTRODUCTION TO STATISTICS
STAT UN1201	CALC-BASED INTRO TO STATISTICS

Upper Division Courses

EEEB UN3087	CONSERVATION BIOLOGY
Two other 3000- or 4000- level courses from the advanced environmental biology courses listed for the major.	

Concentration in Evolutionary Biology of the Human Species

The concentration in evolutionary biology of the human species requires 20 points including the required introductory courses EEEB UN1010 HUMAN ORIGINS # EVOLUTION, EEEB UN1011 BEHAVIOR BIOL-LIVING PRIMATES, an approved conservation course (optimally Primate Conservation) , and three courses for the breadth distribution requirements as described for the major. Students must take a minimum of 15 points from approved biological anthropology courses as described for the major (the two introductory classes count toward that total). The additional courses may be taken in other departments with adviser approval.

Concentrators do not have to complete the theoretical foundation course from archaeology or a seminar.

Special Concentration in Environmental Science for Environmental Biology Majors

The Department of Earth and Environmental Sciences sponsors a special concentration which must be done in conjunction with the environmental biology major. Students should be aware that they must complete the environmental biology major in order to receive credit for the special concentration.

The special concentration in environmental science requires a minimum of 31.5 points, distributed as follows:

Introductory Environmental Science (13.5 points)

EESC UN2100	EARTH'S ENVIRO SYST: CLIM SYST
EESC UN2200	EARTH'S ENVIRONMENTAL SYSTEMS: THE SOLID EARTH
EESC UN2300	EARTH'S ENVIRO SYST: LIFE SYST (equivalent to EEEB UN2002)

Introductory Science (6 points)

Two courses in chemistry, physics, mathematics, or environmental biology from the supporting mathematics and science list for the environmental science major.

Advanced Environmental Science (12 points)

Select four of the following:	
EESC UN3015	The Earth's Carbon Cycle
EESC BC3017	ENVIRONMENTAL DATA ANALYSIS
EESC BC3025	HYDROLOGY
EESC GU4008	Introduction to Atmospheric Science
EESC GU4050	GLOBAL ASSMT-REMOTE SENSING
EESC GU4223	SEDIMENTARY GEOLOGY
EESC GU4550	Plant Ecophysiology
EESC GU4835	Wetlands and Climate Change
EESC GU4885	CHEMISTRY OF CONTINENTL WATERS

EESC GU4917	THE EARTH/HUMAN INTERACTIONS
EESC GU4926	INTRO TO CHEMICAL OCEANOGRAPHY

Advanced courses used to fulfill requirements in the environmental biology major cannot count toward requirements for the special concentration.

Special Concentration in Environmental Biology for Environmental Science Majors

The Department of Ecology, Evolution, and Environmental Biology sponsors a special concentration which must be done in conjunction with the environmental science major. Students should be aware that they must complete the environmental science major in order to receive credit for the special concentration.

The special concentration in environmental biology requires a minimum of 39 points, distributed as follows:

Introductory Environmental Biology and Environmental Science (17 points)

EEEB UN2001	ENVIRONMENTAL BIOLOGY I
EEEB UN2002	ENVIRONMENTAL BIOLOGY II (equivalent to EESC UN2300)
EESC UN2100	EARTH'S ENVIRO SYST: CLIM SYST
EESC UN2200	EARTH'S ENVIRONMENTAL SYSTEMS: THE SOLID EARTH

Introductory Science (13 points)

Select one of the following chemistry sequences:	
CHEM UN1403 - CHEM UN1404	GENERAL CHEMISTRY I-LECTURES and GENERAL CHEMISTRY II-LECTURES
CHEM UN1604 - CHEM UN2507	2ND TERM GEN CHEM (INTENSIVE) and Intensive General Chemistry Laboratory
One term of statistics such as the following:	
EEEB UN3005	INTRO-STAT-ECOLOGY # EVOL BIOL
BIOL BC2286	Statistics and Research Design
STAT UN1101	INTRODUCTION TO STATISTICS
STAT UN1201	CALC-BASED INTRO TO STATISTICS
EEEB UN3087	CONSERVATION BIOLOGY

Advanced Environmental Biology (9 points)

Three additional advanced environmental biology courses (3000-level and above), each chosen from a different curricular area (evolution/genetics, ecology/behavior/conservation, anatomy/physiology/diversity, biology laboratory courses).

Fall 2024

EEEB UN1010 HUMAN ORIGINS # EVOLUTION. *3.00 points*.
CC/GS: Partial Fulfillment of Science Requirement
Lab fee: $25. Taught every fall.

This is an introductory course in human evolution. Building on a foundation of evolutionary theory, students explore primate behavioral morphology and then trace the last 65 million years of primate evolution from the earliest Paleocene forms to the fossil remains of earliest humans and human relatives. Along with Behavioral Biology of the Living Primates this serves as a core required class for the EBHS program

Fall 2024: EEEB UN1010

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 1010	001/12060	M W 11:40am - 12:55pm 602 Hamilton Hall	Jill Shapiro	3.00	48/86
EEEB 1010	AU1/18645	M W 11:40am - 12:55pm Othr Other	Jill Shapiro	3.00	0/6

EEEB UN1110 HUMAN ORIGINS # EVOLUTION-DISC. *0.00 points*.

Fall 2024: EEEB UN1110

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 1110	001/12061	Th 5:10pm - 6:00pm 506 Schermerhorn Hall	Jill Shapiro	0.00	11/30
EEEB 1110	002/12062	Th 6:10pm - 7:00pm 506 Schermerhorn Hall	Jill Shapiro	0.00	5/30
EEEB 1110	003/12063	F 12:10pm - 1:00pm 506 Schermerhorn Hall	Jill Shapiro	0.00	5/30

EEEB UN2001 ENVIRONMENTAL BIOLOGY I. *3.00 points*.
CC/GS: Partial Fulfillment of Science Requirement

Introductory biology course for majors in biology or environmental biology, emphasizing the ecological and evolutionary context of modern biology

Fall 2024: EEEB UN2001

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 2001	001/12064	M W 1:10pm - 2:25pm 333 Uris Hall	Andres Bendesky, Bekka Brodie	3.00	24/60

EEEB UN3005 INTRO-STAT-ECOLOGY # EVOL BIOL. *3.00 points*.
Prerequisites: some background in ecology, evolutionary biology, and/or statistics is recommended.
Intended for those WITHOUT prior knowledge of statistics. Some background in ecology, evolutionary biology required. This is an introduction to the theoretical principles and practical application of statistical methods in ecology and evolutionary biology. The course will cover the conceptual basis for a range of statistical techniques through a series of lectures using examples from the primary literature. The application of these techniques will be taught through the use of statistical software in computer-based laboratory sessions

Fall 2024: EEEB UN3005

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3005	001/12065	M 6:10pm - 8:00pm 330 Uris Hall	Steffen Foerster	3.00	24/35

EEEB UN3015 INTRO-STAT-ECOLGY/EVOL BIO-LAB. *0.00 points*.
Required Lab for EEEB UN3005. An introduction to the theoretical principles and practical application of statistical methods in ecology and evolutionary biology. The course will cover the conceptual basis for a range of statistical techniques through a series of lectures using examples from the primary literature. The application of these techniques will be taught through the use of statistical software in computer-based laboratory sessions

Fall 2024: EEEB UN3015

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3015	001/12066	T 6:10pm - 7:25pm 425 Pupin Laboratories	Steffen Foerster	0.00	8/20
EEEB 3015	002/12067	W 6:10pm - 7:25pm 425 Pupin Laboratories	Steffen Foerster	0.00	8/20

EEEB UN3991 THESIS RESEARCH SEMINAR. *3.00 points*.
Open only to seniors.

Guided, independent, indepth research experience culminating in the senior essay. Weekly meetings are held to review work in progress, to share results through oral and written reports, and to consider career options for further work in this field

Fall 2024: EEEB UN3991

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3991	001/12068	Th 4:10pm - 6:00pm 606 Lewisohn Hall	Matthew Palmer	3.00	8/20

EEEB UN3993 EBHS SENIOR THESIS SEMINAR. *3.00 points*.
Four points for the year-long course.

Prerequisites: the instructor's permission and senior standing as a major in The Evolutionary Biology of the Human Species (EBHS).
Prerequisites: the instructor's permission and senior standing as a major or concentrator in The Evolutionary Biology of the Human Species (EBHS). Year-long seminar in which senior EBHS majors develop a research project and write a senior thesis. Regular meetings are held to discuss research and writing strategies,review work in progress, and share results through oral and written reports

Fall 2024: EEEB UN3993

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3993	001/12069	M 4:10pm - 6:00pm 1015 Ext Schermerhorn Hall	Jill Shapiro	3.00	2/8

EEEB UN3997 INDEPENDENT STUDY. *1.00-3.00 points*.
CC/GS: Partial Fulfillment of Science Requirement

Students conduct research in environmental biology under supervision of a faculty mentor. The topic and scope of the research project must be approved before the student registers for the course

Fall 2024: EEEB UN3997

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3997	001/12070		Jill Shapiro	1.00-3.00	4/6

EEEB GU4005 Conservation Policy. *3 points*.
Prerequisites: Students should have completed at least one course in ecology, evolution or conservation biology.
The purpose of this course is to arm emerging scientists with an understanding of conservation policy at the city, state, federal and international levels. Our focus will be on understanding the science that informs conservation policy, evaluating the efficacy of conservation policies for achieving conservation goals, and learning about the role that scientists play in forming policy.

Fall 2024: EEEB GU4005

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4005	001/12071	T 10:10am - 12:00pm 1015 Ext Schermerhorn Hall	Viorel Popescu	3	23/24

EEEB GU4065 Tropical Biology. *4.00 points*.
Study ecology, evolution, and conservation biology in one of the world's most biologically spectacular settings, the wildlife-rich savannas of Kenya. Although we will meet have a few meetings during the fall semester, the majority of the coursework will be completed during a 16 day field trip to Kenya during winter break. Students will spend their time immersed in an intensive field experience gaining sophisticated training in fieldwork and biological research. Note that there is a lab fee to cover all in-country expenses, and students are also responsible for the cost of airfare to and from Kenya

Fall 2024: EEEB GU4065

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4065	001/12072		Dustin Rubenstein	4.00	14/14

EEEB GU4100 FOREST ECOLOGY. *4.00 points*.
Prerequisites: one year of college biology.
EEEB GU4100 Forest Ecology focuses on interpreting and understanding pattern and process in forested ecosystems. These ecosystems include the assemblages of trees and the biological communities and environments in which they exist. The complex interactions among the organisms and the physical environment are a major focus of this course. The course involves lecture, literature discussion, and field laboratory components, with an emphasis on the analysis and interpretation of student-collected data. FRIDAY MEETINGS WILL RUN ALL DAY IN SEPTEMBER and OCTOBER

Fall 2024: EEEB GU4100

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4100	001/12073	W 1:10pm - 2:25pm 1015 Ext Schermerhorn Hall	Kevin Griffin, Matthew Palmer	4.00	16/16
EEEB 4100	001/12073	F 9:00am - 1:00pm 1015 Ext Schermerhorn Hall	Kevin Griffin, Matthew Palmer	4.00	16/16

EEEB GU4129 Zoo Conservation. *3 points*.
CC/GS: Partial Fulfillment of Science Requirement

This course examines the role and function of the modern zoo in the context of the modern conservation movement. Students will learn about the evolution of the zoological park from an entertainment venue to a reservoir of rare or otherwise endangered species of animals, and as a catalyst for conservation of these species.

Fall 2024: EEEB GU4129

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4129	001/12074	Th 6:10pm - 8:00pm 1015 Ext Schermerhorn Hall	Scott Silver	3	14/12

EEEB GU4140 ORNITHOLOGY. *3.00 points*.
Prerequisites: EEEB UN2001, EEEB UN2002, or equivalent.
This basic ornithology class lays the foundation for more in-depth study as it presents an overview of avian evolution, ecology, and current conservation issues.

Fall 2024: EEEB GU4140

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4140	001/12075	Th 10:10am - 12:00pm 1015 Ext Schermerhorn Hall	Chad Seewagen	3.00	15/15

EEEB GU4196 Coastal Ecosystem Science and Policy. *3.00 points*.
With approximately 40# of the global population residing in coastal regions, only about 15# of Earth's coastlines remain intact. Human interactions have affected these complex and biodiverse ecosystems for thousands of years, leaving coasts vulnerable to climate change and the demands of human population increase. By understanding both the science and social behaviors behind ecosystem dynamics, policies can be put forth to mitigate current anthropogenic influences on coastal integrity. This seminar will take a multi-disciplinary in examining current issues and policies that affect coastal ecosystems around the world. To do so, the semester will be divided into three sections. We will begin with the foundations: what defines a coastal ecosystem and how society and these environments have influenced one another. The second part of class will provide a primer on policy development and implementation. Finally, the remainder of the semester will be dedicated to the pertinent problems facing today's coastal ecosystems and the policies put forth in response. Bulletin Description: With approximately 40# of the global population residing in coastal regions, only about 15# of Earth's coastlines remain intact. This course provides an overview of pressing issues and key policies that impact these coastal ecosystems. We will examine the roles that science, history, and social dynamics play in developing and implementing coastal policies and management, while enhancing skills in science communication. Some background in ecology, such as EBII, is recommended but not required. Previous experience in policy is not required

EEEB GU4350 PRIMATE SEXUALITY. *3.00 points*.
CC/GS: Partial Fulfillment of Science Requirement

Prerequisites: (EEEB UN1010) or (EEEB UN1011)
In this course we take an integrative and comparative approach to understanding the sexual lives of primates. Focusing on mating and reproductive behavior with an explicitly evolutionary perspective, we will identify the fundamental principles of how and why selection has favored particular behaviors and morphologies in different primate species.

Fall 2024: EEEB GU4350

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4350	001/12077	T Th 1:10pm - 2:25pm 703 Hamilton Hall		3.00	11/20

Spring 2024

EEEB UN1005 1ST YR SEM-ECOL,EVOL,EVIR BIO. *1.00 point*.
This course provides a brief introduction to ecology, evolution and environmental biology with an emphasis on key concepts, current research, and opportunities for undergraduates. The course is taught jointly by the faculty in the department of Ecology, Evolution and Environmental Biology (E3B), with each session covering a different aspect of research and/or teaching in the department. Students are expected to complete weekly readings and participate in discussion both in class and online

Spring 2024: EEEB UN1005

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 1005	001/13280	T 2:40pm - 3:55pm 1015 Ext Schermerhorn Hall	Jill Shapiro, Matthew Palmer	1.00	19/30

EEEB UN1011 BEHAVIOR BIOL-LIVING PRIMATES. *3.00 points*.
CC/GS: Partial Fulfillment of Science Requirement

Prerequisites: Corequisite EEEB UN1111
Prerequisites: Corequisite EEEB UN1111 Study of non-human primate behavior from the perspective of phylogeny, adaptation, physiology and anatomy, and life history. Focuses on the four main problems primates face: finding appropriate food, avoiding being eaten themselves, reproducing in the face of competition, and dealing with social partners. Along with Human Origins - Evolution, this serves as a core required class for the EBHS program

Spring 2024: EEEB UN1011

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 1011	001/13412	M W 1:10pm - 2:25pm 140 Uris Hall	Aaron Sandel	3.00	42/50

EEEB UN1111 BEHAVIORAL BIOL-DISC. *0.00 points*.

Spring 2024: EEEB UN1111

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 1111	001/13415	W 6:10pm - 7:00pm 325 Pupin Laboratories	Aaron Sandel	0.00	25/25
EEEB 1111	002/13417	F 11:00am - 11:50am 311 Fayerweather	Aaron Sandel	0.00	16/25

EEEB UN2002 ENVIRONMENTAL BIOLOGY II. *4.00 points*.
CC/GS: Partial Fulfillment of Science Requirement

Prerequisites: EEEB UN2001
Prerequisites: EEEB UN2001 Second semester of introductory biology sequence for majors in enviromnental biology and environmental science, emphasizing the ecological and evolutionary aspects of biology. Also intended for those interested in an introduction to the principles of ecology and evolutionary biology

Spring 2024: EEEB UN2002

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 2002	001/13282	M W 11:40am - 12:55pm 313 Fayerweather	Matthew Palmer, Sonya Dyhrman	4.00	19/40

EEEB UN3087 CONSERVATION BIOLOGY. *3.00 points*.
CC/GS: Partial Fulfillment of Science Requirement

Prerequisites: introductory organismal biology course, ideally EEEB UN2002.
Prerequisites: Science majors should have completed one introductory course that covers biology, ecology, evolution or conservation priort to taking this course. Non-science majors should have some exposure to these same topics but are not required to have taken courses in advance of this class

Spring 2024: EEEB UN3087

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3087	001/13288	M 6:10pm - 8:00pm 1015 Ext Schermerhorn Hall	Dustin Partridge	3.00	30/30

EEEB UN3187 CONSERVATION BIOLOGY-DISC. *0.00 points*.

Spring 2024: EEEB UN3187

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3187	001/13385	W 6:10pm - 7:00pm 307 Mathematics Building	Dustin Partridge	0.00	15/15
EEEB 3187	002/13393	Th 6:10pm - 7:00pm 652 Schermerhorn Hall	Dustin Partridge	0.00	15/15

EEEB UN3204 Dynamics of Human Evolution. *4 points*.
CC/GS: Partial Fulfillment of Science Requirement
Enrollment limited to 13. Priority is given to EBHS majors/concentrators.

Prerequisites: EEEB UN1010 Human Species/HO&E, ANTH UN1007 Origins of Human Society, or the equivalent.
Seminar focusing on recent advances in the study of human evolution. Topics include changing views of human evolution with respect to early hominin behavior, morphology, culture and evolution. [Either Dynamics of Human Evolution or Neandertals is taught every other year.]

Spring 2024: EEEB UN3204

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3204	001/13293	Th 4:10pm - 6:00pm 652 Schermerhorn Hall	Jill Shapiro	4	11/12

EEEB UN3215 FORENSIC OSTEOLOGY. *3.00 points*.
CC/GS: Partial Fulfillment of Science Requirement
Taught every other year. Enrollment limited to 15. Priority given at first class session to EBHS majors/concentrators.

Prerequisites: no prior experience with skeletal anatomy required. Not appropriate for students who have already taken either EEEB GU4147 or EEEB GU4148.
Prerequisites: no prior experience with skeletal anatomy required. Not appropriate for students who have already taken either EEEB GU4147 or EEEB GU4148. An exploration of the hidden clues in your skeleton. Students learn the techniques of aging, sexing, assessing ancestry, and the effects of disease, trauma and culture on human bone

Spring 2024: EEEB UN3215

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3215	001/13304	M W 4:10pm - 6:00pm 506 Schermerhorn Hall	Jill Shapiro	3.00	13/15

EEEB UN3992 THESIS RESEARCH SEMINAR. *3.00 points*.
Guided, independent, indepth research experience culminating in the senior essay. Weekly meetings are held to review work in progress, to share results through oral and written reports, and to consider career options for further work in this field

Spring 2024: EEEB UN3992

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3992	001/13324	Th 4:10pm - 6:00pm 202 Altschul Hall	Matthew Palmer, Maria Strangas, Darice Westphal	3.00	11/20

EEEB UN3994 EBHS SENIOR THESIS SEMINAR. *3.00 points*.
Prerequisites: the instructors permission and senior standing as a major in The Evolutionary Biology of the Human Species (EBHS). Year-long seminar in which senior EBHS majors develop a research project and write a senior thesis. Regular meetings are held to discuss research and writing strategies, review work in progress, and share results through oral and written reports

Spring 2024: EEEB UN3994

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3994	001/13330	M 1:10pm - 3:00pm 1020 Schermerhorn Hall	Jill Shapiro	3.00	2/6

EEEB UN3998 INDEPENDENT STUDY. *1.00-3.00 points*.
CC/GS: Partial Fulfillment of Science Requirement

Students conduct research in environmental biology under supervision of a faculty mentor. The topic and scope of the research project must be approved before the student registers for the course

Spring 2024: EEEB UN3998

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 3998	001/13333		Matthew Palmer	1.00-3.00	1/10
EEEB 3998	002/13335		Jill Shapiro	1.00-3.00	7/6
EEEB 3998	003/20920		Jill Shapiro	1.00-3.00	1/2
EEEB 3998	004/20969		Andres Bendesky	1.00-3.00	1/2

EEEB GU4015 ANIMAL COMMUN:PRIMATE PERSP. *3.00 points*.

Spring 2024: EEEB GU4015

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4015	001/13338	T Th 10:10am - 11:25am 328 Uris Hall	Alba Lucia Morales Jimenez	3.00	7/20

EEEB GU4055 Principles and Applications of Modern DNA Sequencing. *3 points*.

CC/GS: Partial Fulfillment of Science Requirement

Prerequisites: An introductory biology course or instructor permission
Genome sequencing, the technology used to translate DNA into data, is now a fundamental tool in biological and biomedical research, and is expected to revolutionize many related fields and industries in coming years as the technology becomes faster, smaller, and less expensive. Learning to use and interpret genomic information, however, remains challenging for many students, as it requires synthesizing knowledge from a range of disciplines, including genetics, molecular biology, and bioinformatics. Although genomics is of broad interest to many fields, such as ecology, evolutionary biology, genetics, medicine, and computer science, students in these areas often lack sufficient background training to take a genomics course. This course bridges this gap, by teaching skills in modern genomic technologies that will allow students to innovate and effectively apply these tools in novel applications across disciplines. To achieve this, we implement an active learning approach to emphasize genomics as a data science, and use this organizing principle to structure the course around computational exercises, lab-based activities using state-of-the-art sequencing instruments,case studies, and field work. Together, this approach will introduce students to the principles of genomics by allowing them to generate, analyze, and interpret data hands-on while using the most cutting-edge genomic technologies of today in a stimulating and engaging learning experience.

Spring 2024: EEEB GU4055

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4055	001/13341	M W 1:10pm - 2:25pm 1015 Ext Schermerhorn Hall	Deren Eaton, Andres Bendesky	3	18/20

EEEB GU4105 Intermediate Statistics for Ecology and Evolutionary Biology. *3.00 points*.

This course builds on an introductory course in statistics and dives deeper into linear regression models, including generalized linear models, mixed/hierarchical models, model diagnostics, and model selection. It focuses on the practical applications of these methods rather than the mathematical complexities. A prior course or equivalent knowledge of fundamental concepts in statistics as well as familiarity with R programming are required pre-requisites for this course

Spring 2024: EEEB GU4105

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4105	001/13349	T 6:10pm - 8:00pm 1015 Ext Schermerhorn Hall	Steffen Foerster	3.00	8/20
EEEB 4105	001/13349	Th 6:10pm - 8:00pm 305 Uris Hall	Steffen Foerster	3.00	8/20

EEEB GU4112 Ichthyology. *3 points*.

CC/GS: Partial Fulfillment of Science Requirement

Fish are an incredibly diverse group with upwards of 27,000 named species. They are important ecologically, represent one of the major vertebrate lineages and face numerous conservation threats. This course will provide students with the tools to understand how the evolution, systematics, anatomy, and diversity of fishes influence their conservation status.

Spring 2024: EEEB GU4112

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4112	001/13352	F 10:10am - 12:40pm 1015 Ext Schermerhorn Hall	Bruno Melo	3	12/15

EEEB GU4126 INTRO TO CONSERVATION GENETICS. *3.00 points*.

In this course, we will use evolutionary genetic principles and population genetic models to describe the extent and distribution of genetic variation in populations and species, and determine ways to conserve it. A basic knowledge of genetics and mathematics is assumed.

Spring 2024: EEEB GU4126

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4126	001/13357	Th 12:10pm - 2:00pm 1015 Ext Schermerhorn Hall	Rachel Welt	3.00	10/20

EEEB GU4135 URBAN ECOLOGY # DESIGN. *3.00 points*.

Spring 2024: EEEB GU4135

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4135	001/13361	F 11:10am - 1:00pm 608 Schermerhorn Hall	Matthew Palmer	3.00	29/35

EEEB GU4201 ECO, BEHAVIOR # CONSERVATION OF MAMMALS. *3.00 points*.

CC/GS: Partial Fulfillment of Science Requirement

Prerequisites: A course in either organismal biology, evolution, ecology or permission of the ,instructor if G4200 was not taken.
This course examines the wide ranging aspects of features of mammalian natural history, behavior and ecology, and considers the implications of these features on the conservation status of particular mammal taxa for the future. We will also explore particular conservation challenges for mammals such as bats, grazing mammals, and large carnivores in increasingly human-dominated landscapes. This course will be a combination of lecture and student led discussions related to the conservation issues facing mammals today.

Spring 2024: EEEB GU4201

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4201	001/13367	Th 6:10pm - 8:00pm 1015 Ext Schermerhorn Hall	Scott Silver	3.00	9/12

EEEB GU4650 Biodiversity and Ecosystem Processes. *3 points*.
Prerequisites: E3B courses in ecology, evolution and/or biodiversity or the instructor's permission.
Survey of current advances in scientific research that focuses on the role biodiversity plays in governing ecological processes (e.g., biogeochemistry, resisting invasion by exotic species, or stabilizing communities) and ecosystem services (e.g., soil fertility, water quality, climate regulation).

Spring 2024: EEEB GU4650

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
EEEB 4650	001/13371	M 4:10pm - 6:00pm 1015 Ext Schermerhorn Hall	Shahid Naeem	3	9/25

Of Related Interest

Economics	
ECON GU4625	Economics of the Environment
Earth and Environmental Sciences	
EESC UN2330	SCIENCE FOR SUSTAINABLE DEVPT
EESC GU4050	GLOBAL ASSMT-REMOTE SENSING
EESC GU4550	Plant Ecophysiology
EESC GU4835	Wetlands and Climate Change
Political Science	
POLS GU4730	GAME THEORY # POLIT THEORY