ECOLOGY & EVOLUTIONARY BIOLOGY (EBIO)

EBIO 113 - ENVIRONMENTAL CRISIS SEMINAR
Short Title: ENVIRONMENTAL CRISIS SEMINAR
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Seminar
Distribution Group: Distribution Group III
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: Discussion of environmental crises. Topics vary annually. Cross-list: ENST 113, ESCI 113. Repeatable for Credit.

EBIO 116 - FRESHMAN SEMINAR ON LOCAL BIOLOGY RESEARCH (EEB)
Short Title: FRESHMAN BIOLOGY SEMINAR (EEB)
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Seminar
Distribution Group: Distribution Group III
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: A 7-week seminar course to introduce freshmen prospective biologists to the excitement of research at Rice and the Medical Center and to provide context with which to think about facts presented in biosciences textbooks. Small groups will meet weekly with a graduate student or postdoctoral researcher to explore a published research article by a local lab, gaining background information about the subject and exposure to the research techniques. In the final session, the group will tour the lab that produced the featured article. Additional tours and activities TBA. All first-year, non-transfer students are eligible to enroll in EBIO 116/FSEM 116 regardless of AP credit. This course meets in the first half of the semester and features research in the Program of Ecology and Environmental Biology. Cross-list: FSEM 116.

EBIO 124 - INTRODUCTION TO ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: INTRO TO EEB
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: This course provides a short introduction to the science of ecology and evolutionary biology. The topics covered include the mechanisms of evolution, the origin of species, the history of life on earth, biodiversity, animal behavior, population and community ecology, ecosystems, and conservation biology.

EBIO 202 - INTRODUCTORY BIOLOGY II
Short Title: INTRODUCTORY BIOLOGY II
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Prerequisite(s): BIOC 201
Description: The second in a series of two introductory biology courses (BIOC 201, EBIO 202). This course examines the diversity of life, comparative animal physiology, evolution, ecology, and conservation. An emphasis is placed on evolution as a central framework necessary for a complete understanding of modern biology. Group discussions allow students to explore topics in more detail and discover how they are relevant to our everyday lives.

EBIO 204 - ENVIRONMENTAL SUSTAINABILITY: THE DESIGN & PRACTICE OF COMMUNITY AGRICULTURE
Short Title: COMMUNITY GARDEN
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Distribution Group: Distribution Group III
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: The course introduces the fundamentals of community garden design and practice. Responsibilities will center on developing and improving the Rice Community Garden. A strong emphasis will be on learning and applying ecological principles to the practice of community agriculture. Class has required meetings outside of regular class time. Cross-list: ENST 204. Repeatable for Credit.

EBIO 213 - INTRO EXPERIMENTAL ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: INTRO EXP ECOL & EVOL BIOL
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Distribution Group: Distribution Group III
Credit Hours: 2
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: Experimental, laboratory, and field studies of natural history, ecology, evolution, and animal behavior. Class has required meetings outside of regular class time.

EBIO 215 - BIOS LAB TEACHING
Short Title: BIOS LAB TEACHING
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Laboratory
Credit Hours: 1-3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: Undergraduate teaching in a biosciences laboratory. Participate in meetings and selected seminars; supervise students in one or more laboratory sections. Provide group and individual instruction to undergraduates during and outside of laboratory classes. Instructor Permission Required. Repeatable for Credit.
EBIO 216 - DISCUSSION SECTION TEACHING
Short Title: DISCUSSION SECTION TEACHING
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Independent Study
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: In this course, undergraduates who have previously excelled in EBIO courses will develop teaching skills by leading discussion sections for the benefit of students presently taking EBIO courses under the guidance of the professor teaching the course. Instructor Permission Required.

EBIO 270 - ECOSYSTEM MANAGEMENT
Short Title: ECOSYSTEM MANAGEMENT
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: This course will focus on applied ecosystem topics including relations with state and federal agencies, filed studies, wetland delineations, permitting compliance, and environmental regulations. Graduate/Undergraduate Equivalency: EBIO 570. Mutually Exclusive: Credit cannot be earned for EBIO 270 and EBIO 570.

EBIO 280 - SUSTAINABILITY DEVELOPMENT AND REPORTING
Short Title: SUSTAINABILITY DEVELOPMENT
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Lower-Level
Description: Sustainable development is an approach to development based on interacting social, economic, and environmental forces. It is intended as methodology for planning, and a guiding principle for Environmental Health and safety compliance (EHSs) and Corporate Sustainability (CSRs). Students will learn compliance guidelines, risk management, and assessment considerations. Graduate/Undergraduate Equivalency: EBIO 580. Mutually Exclusive: Credit cannot be earned for EBIO 280 and EBIO 580.

EBIO 306 - INDEPENDENT RESEARCH FOR ECOLOGY & EVOLUTIONARY BIOLOGY UNDERGRADUATES
Short Title: EEB UNDERGRADUATES IND RES
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Research
Credit Hours: 1-3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): EBIO 213
Description: Program of independent research for students with previous training in the biosciences. Includes a research paper. Students are expected to spend at least three hours per week in the laboratory for each semester hour of credit. If receiving two or more credits, students will be required to participate in the university annual undergraduate symposium in the spring semesters. Instructor Permission Required. Repeatable for Credit.

EBIO 316 - LAB MODULE IN ECOLOGY
Short Title: LAB MODULE IN ECOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Laboratory
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): EBIO 323 or EBIO 325
Description: Field and lab experiments in ecology. Class has required meetings outside of regular class time.

EBIO 317 - LAB MODULE IN BEHAVIOR
Short Title: LAB MODULE IN BEHAVIOR
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Laboratory
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): EBIO 321 and EBIO 213
Description: Field experiments in behavior. Learn to formulate and test hypotheses on bird behavior using mockingbirds, grackles, and herons nesting on campus. Class has required meetings outside of regular class time.

EBIO 319 - TROPICAL FIELD BIOLOGY
Short Title: TROPICAL FIELD BIOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Laboratory
Credit Hours: 2
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: Examine first-hand the two most diverse ecosystems on earth - the coral reef and the tropical rainforest in this 2-week summer course in the Central American country of Belize. Topics will include the diversity of tropical organisms and habitats, the formation of coral reefs, rainforest ecology, historical biogeography, symbiosis, and conservation of tropical biodiversity. While a background in biology is desirable, individuals lacking this background but having a special interest in the tropics are encouraged to enroll. Students will be responsible for their own transportation and accommodation cost (exact price TBD). Instructor Permission Required.
EBIO 320 - ECOLOGY AND CONSERVATION OF BRAZILIAN WETLANDS LABORATORY
Short Title: BRAZILIAN WETLANDS LAB
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Distribution Group: Distribution Group III
Credit Hours: 2
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: This course consists of a 2-week trip to Brazil to examine first-hand the ecology of the largest wetland ecosystem on earth - the Pantanal. Days will be spent in the field making observations and collecting data; lectures in the evenings will cover topics including freshwater ecology, seasonal flooding dynamics, community ecology of wetland species, symbiosis, geology, environmental management, ecotourism, and conservation biology. Recommended Prerequisite(s): EBIO 213

EBIO 321 - ANIMAL BEHAVIOR
Short Title: ANIMAL BEHAVIOR
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): BIOC 201 and EBIO 202
Description: Evolutionary theory is used to evaluate behavioral adaptations of organisms to their environment.

EBIO 323 - CONSERVATION BIOLOGY
Short Title: CONSERVATION BIOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): BIOC 201 and EBIO 202
Description: The course is designed to give students a broad overview of conservation biology. Lecture and discussions will focus on conservation issues such as biodiversity, extinction, management, sustained yield, invasive species and preserve design. Cross-list: ENST 323. Graduate/Undergraduate Equivalency: EBIO 523. Mutually Exclusive: Credit cannot be earned for EBIO 323 and EBIO 523.

EBIO 324 - CONSERVATION BIOLOGY LAB
Short Title: CONSERVATION BIOLOGY LAB
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Laboratory
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): EBIO 213 and EBIO 323 (may be taken concurrently)
Description: This course will give students hands-on experiences in the practice of conservation biology through authentic projects related to prioritization and design of nature preserves, restoration of natural environments, and for monitoring threatened and endangered species in the Houston area. EBIO 323 may be taken concurrently with EBIO 324. Graduate/Undergraduate Equivalency: EBIO 524. Mutually Exclusive: Credit cannot be earned for EBIO 324 and EBIO 524.

EBIO 325 - ECOLOGY
Short Title: ECOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): BIOC 201 and EBIO 202
Description: Study of population dynamics, species interactions, plant and animal community organization, and ecosystem function. Graduate/Undergraduate Equivalency: EBIO 525. Mutually Exclusive: Credit cannot be earned for EBIO 325 and EBIO 525.

EBIO 326 - INSECT BIOLOGY
Short Title: INSECT BIOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: This course addresses contemporary issues in ecology and evolution through the lens of insect diversity. Readings span a broad literature (popular to technical). Writing and oral reports develop proficiency in scientific communication.

EBIO 327 - BIOLOGICAL DIVERSITY
Short Title: BIOLOGICAL DIVERSITY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): BIOC 201 and EBIO 202 and EBIO 213
Description: The lecture/laboratory course in field ecology focuses on the theory and practice of estimating biodiversity. The goals are to acquaint students with basic techniques for field sampling and quantifying biodiversity as well as some aspects of the natural history of south and east Texas. These will be accomplished through four field trips during the first half of the semester and an independent research project to be completed by the end of the semester. Class has required meetings outside of regular class time.
EBIO 328 - EVOLUTION OF GENES & GENOMES
Short Title: EVOLUTION OF GENES & GENOMES
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): BIOC 201 and EBIO 202
Description: The course provides an overview of the evolution of genes and genomes. Using many examples, the course introduces databases and the Worldwide Web, and molecular and statistical methods used to study the evolution of genes and genomes. Broad-scale evolutionary patterns and medical applications based on genome analyses are presented.

EBIO 329 - ANIMAL BIOLOGY AND PHYSIOLOGY
Short Title: ANIMAL BIOLOGY AND PHYSIOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): BIOC 201 or EBIO 202
Description: The evolution and systematics of the animal kingdom with consideration of functional anatomy, comparative physiology, behavior, medical implications and resource management. Cross-list: BIOC 329. Graduate/Undergraduate Equivalency: EBIO 529. Mutually Exclusive: Credit cannot be earned for EBIO 329 and EBIO 529.

EBIO 330 - INSECT BIOLOGY LAB
Short Title: INSECT BIOLOGY LAB
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): BIOC 201 and EBIO 202 and EBIO 213
Description: Lectures will address contemporary issues in ecology and evolution through the lens of insect diversity. Labs will provide hands-on experiences with collection and curation of insects.

EBIO 331 - BIOLOGY OF INFECTIOUS DISEASES
Short Title: BIOLOGY OF INFECTIOUS DISEASES
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): EBIO 213
Description: This course gives a broad overview of the biology of infectious diseases using examples from humans, plants, and animals. Topics include diversity of diseases, mechanisms of disease transmission, epidemiology, population regulation, evolution of virulence, disease dynamics in natural communities and disease invasion and conservation biology. Cross-list: BIOC 331.

EBIO 332 - EVOLUTION OF GENES & GENOMES LAB
Short Title: EVOLUTION GENES & GENOMES LAB
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Laboratory
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): EBIO 328
Description: The laboratory course is designed to demonstrate concepts and approaches introduced in the lecture course EBIO 328. The text book remains the same, but the course will heavily rely on the computational exercises provided in the text (called Weblems). Students will be shown how to conduct analysis of sequence data, search databases, literature, and how to synthesize such data. Students will conduct their own projects, some suggested by the text, some by the instructor, some perhaps ideas of their own. Students present and defend their results in writing and in form of presentations and posters. The course would be useful for graduate student education, with added requirements for graduate students.

EBIO 333 - EVOLUTIONARY BIOINFORMATICS
Short Title: EVOLUTIONARY BIOINFORMATICS
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: Large accessible data sets have opened new frontiers in evolutionary biology, and many fields. Learn to write computer programs to test hypotheses and discover patterns in diverse data. Understand the most common strategies in evolutionary bioinformatics, including dynamic programming, hidden Markov models, and graphical algorithms. No previous programming experience required. Cross-list: COMP 370. Recommended Prerequisite(s): MATH 101 and MATH 102.

EBIO 334 - EVOLUTION
Short Title: EVOLUTION
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): EBIO 202
Description: Principles of biological evolution. Topics include natural selection, adaptation, molecular evolution, formation of new species, the fossil record, biogeography, and principles of classification. Cross-list: BIOC 334.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Department</th>
<th>Short Title</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>EBIO 333</td>
<td>EVOLUTIONARY BIOINFORMATICS LAB</td>
<td>Biosciences</td>
<td>EVOLUTION BIOINFORMATICS LAB</td>
<td>This course provides an overview of methods of algal strain selection and cultivation for food, fodder, fertilizers, biofuels, pharmaceuticals, and cosmetics. Graduate/Undergraduate Equivalency: EBIO 566. Mutually Exclusive: Credit cannot be earned for EBIO 340 and EBIO 540.</td>
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<tr>
<td>EBIO 336</td>
<td>PLANT DIVERSITY</td>
<td>Biosciences</td>
<td>PLANT DIVERSITY</td>
<td>This lab course provides an introduction to techniques of isolation, culturing, measuring of growth and identification of algae.</td>
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<tr>
<td>EBIO 337</td>
<td>FIELD BIRD BIOLOGY LAB</td>
<td>Biosciences</td>
<td>FIELD BIRD BIOLOGY LAB</td>
<td>This course centers on a series of five field trips to diverse habitats for observing birds both immigrants and residents. Each will be preceded by a lecture and students will do two projects. Class has required meetings outside of regular class time.</td>
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<tr>
<td>EBIO 338</td>
<td>DESIGN &amp; ANALYSIS OF BIOLOGICAL EXPERIMENTS</td>
<td>Biosciences</td>
<td>DESIGN &amp; ANALYSIS OF BIOL EXP</td>
<td>This course addresses how to set up and how to draw conclusions from biological experiments. It introduces basic theories in statistics, interwoven with data analysis using software packages. Students will learn to design statistically sound data collection in observational or experimental studies. To answer given research questions, students will choose among modern statistical tools and analyze data using software. Students will also learn to effectively present results using statistical graphics. This class particularly focuses on ecological and environmental data.</td>
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<td>ESBI 340</td>
<td>GLOBAL BIOGEOCHEMICAL CYCLES</td>
<td>Biosciences</td>
<td>GLOBAL BIOGEOCHEMICAL CYCLES</td>
<td>This course introduces students to the coupled nature of the biosphere, atmosphere and hydrosphere using as focal points elemental cycles such as those of carbon and nitrogen. This is a writing-intensive class, and will include 3 required Saturday field trips. Cross-list: ENST 340, ESCI 340. Graduate/Undergraduate Equivalency: EBIO 540. Mutually Exclusive: Credit cannot be earned for EBIO 340 and EBIO 540.</td>
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<tr>
<td>ESBI 365</td>
<td>INTRODUCTORY PHYCOLOGY</td>
<td>Biosciences</td>
<td>INTRODUCTORY PHYCOLOGY</td>
<td>This course provides an overview of the biology of algae including their physiology, taxonomy, biochemistry, and ecology. Students will study the role of algae in different environments, their importance as primary producers, and their economic value.</td>
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<tr>
<td>EBIO 366</td>
<td>APPLIED PHYCOLOGY</td>
<td>Biosciences</td>
<td>APPLIED PHYCOLOGY</td>
<td>This course provides an overview of the biology of algae including their physiology, taxonomy, biochemistry, and ecology. Students will study the role of algae in different environments, their importance as primary producers, and their economic value.</td>
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<tr>
<td>EBIO 367</td>
<td>INTRODUCTION PHYCOLOGY LAB</td>
<td>Biosciences</td>
<td>INTRODUCTION PHYCOLOGY</td>
<td>This course provides an overview of the biology of algae including their physiology, taxonomy, biochemistry, and ecology. Students will study the role of algae in different environments, their importance as primary producers, and their economic value.</td>
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<tr>
<td>ENST 340</td>
<td>PLANT DIVERSITY</td>
<td>Biosciences</td>
<td>PLANT DIVERSITY</td>
<td>This lab course provides an introduction to techniques of isolation, culturing, measuring of growth and identification of algae.</td>
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</tbody>
</table>

**Prerequisite(s):**
- BIOC 201 and EBIO 202

**Restrictions:** Graduate level students may not enroll.

**Course Level:** Undergraduate Upper-Level
EBIO 368 - APPLIED PHYCOLOGY LAB
Short Title: APPLIED PHYCOLOGY LAB
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Laboratory
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): BIOC 201 and EBIO 202
Corequisite: EBIO 366
Description: In this course students will learn methods of algal strain selection and mass cultivation together with analyses of algal characteristics including their lipid composition, enzymes and pigments.

EBIO 372 - CORAL REEF ECOSYSTEMS
Short Title: CORAL REEF ECOSYSTEMS
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): EBIO 202
Description: This three credit lecture course introduces students to a complex, dynamic and sensitive ecosystem: coral reefs. We will explore the biotic and abiotic components of coral reefs; how reef organisms interact with each other and the environment, and the factors that contribute to reef construction and decline over time and space. Graduate/Undergraduate Equivalency: EBIO 572. Mutually Exclusive: Credit cannot be earned for EBIO 372 and EBIO 572.

EBIO 379 - LAB MODULE IN AQUATIC ECOLOGY WITH SCUBA
Short Title: LAB MOD AQU ECOLOGY WITH SCUBA
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Distribution Group: Distribution Group III
Credit Hour: 1
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: Students will learn some fundamentals of aquatic ecosystems and conduct lab exercises that involve SCUBA-based fieldwork in a nationally recognized freshwater dive site. Course has required meetings outside of regular class time. Prerequisites: LPAP 194 or proof of Open Water Scuba certification from a professional organization (e.g., PADI, NAUI). A course fee ranging from $300 to $535 is associated with the class. Please send all enrollment requests to Mariah McClarty, mam22@rice.edu and include the following information: major, year, scuba certification level and issuing professional organization, and a brief statement about why you want to take the course. You will be notified of enrollment decisions by December 5th. Department Permission Required. Cross-list: ENST 379. Graduate/Undergraduate Equivalency: EBIO 579. Recommended Prerequisite(s): EBIO 213 and LPAP 194. Mutually Exclusive: Credit cannot be earned for EBIO 379 and EBIO 579.

EBIO 391 - TRANSFER CREDIT IN ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: TRAN CREDIT ECOL&EVOLUTION
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Transfer
Credit Hours: 3
Course Level: Undergraduate Upper-Level
Description: For transfer of courses which have no current equivalent in the Rice curriculum, but which can be counted as Group B Biosciences courses in satisfying requirements for majors in the Biosciences. Repeatable for Credit.

EBIO 393 - LAB TRANSFER CREDIT IN BIOSCIENCES
Short Title: LAB TRANSFER CREDIT
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Transfer
Credit Hour: 1
Course Level: Undergraduate Upper-Level
Description: For transfer of an advanced laboratory course in the biosciences that has no current equivalent in the Rice Biosciences curriculum. Any student may receive a maximum of one credit of EBIO 393.

EBIO 403 - UNDERGRADUATE HONORS RESEARCH IN ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: UNDERGRADUATE HONORS RESEARCH
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Research
Credit Hours: 5
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: Open only to undergraduate majors who meet specific requirements and with permission of the research supervisor and chair. Registration for EBIO 403/404 implies a commitment to participate in research for at least 2 semesters. Department Permission Required.

EBIO 404 - UNDERGRADUATE HONORS RESEARCH IN ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: UNDERGRADUATE HONORS RESEARCH
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Research
Credit Hours: 5
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: Open only to undergraduate majors who meet specific requirements and with permission of the research supervisor and chair. Registration for EBIO 403/404 implies a commitment to participate in research for at least 2 semesters. Department Permission Required.
EBIO 412 - ADVANCED COMMUNICATION IN THE BIOLOGICAL SCIENCES  
**Short Title:** ADV COMMUNICATION IN BIOL SCI  
**Department:** Biosciences  
**Grade Mode:** Standard Letter  
**Course Type:** Lecture  
**Credit Hours:** 3  
**Restrictions:** Graduate level students may not enroll.  
**Course Level:** Undergraduate Upper-Level  
**Description:** This course will focus on improving students' written and oral communication skills. Students will develop a critical understanding of the discipline of communication through a combination of lectures and discussion that span a range of topics. With the instructor's help, students will use current papers to stimulate debate on the theories, philosophies and methods of communication. Instructor Permission Required. Repeatable for Credit.

EBIO 433 - ADVANCED ECOLOGY  
**Short Title:** ADVANCED ECOLOGY  
**Department:** Biosciences  
**Grade Mode:** Standard Letter  
**Course Type:** Lecture  
**Credit Hours:** 2  
**Restrictions:** Graduate level students may not enroll.  
**Course Level:** Undergraduate Upper-Level  
**Prerequisite(s):** BIOC 201 and EBIO 202 and EBIO 325  
**Description:** Students will develop a critical understanding of the discipline of ecology through a combination of lectures and discussion that span a range of topics. With the instructor's help, students will use current papers to stimulate debate on the theories, philosophies and methods of the study of populations, communities, and ecosystems. Instructor Permission Required.

EBIO 520 - STUDENT SEMINAR IN ECOLOGY AND EVOLUTIONARY BIOLOGY  
**Short Title:** STUDENT SEMINAR IN EEB  
**Department:** Biosciences  
**Grade Mode:** Standard Letter  
**Course Type:** Seminar  
**Credit Hour:** 1  
**Restrictions:** Enrollment is limited to Graduate level students.  
**Course Level:** Graduate  
**Description:** Student-led presentations of work in progress, research ideas, and topics of research interest. Designed to enhance oral presentation skills and facilitate discussion of research ideas. Open to upper-level undergraduates and graduate students. Recommended Prerequisite(s): Graduate Status or current enrollment in EBIO 403. Repeatable for Credit.

EBIO 523 - CONSERVATION BIOLOGY  
**Short Title:** CONSERVATION BIOLOGY  
**Department:** Biosciences  
**Grade Mode:** Standard Letter  
**Course Type:** Lecture  
**Credit Hours:** 3  
**Restrictions:** Enrollment is limited to Graduate level students.  
**Course Level:** Graduate  
**Prerequisite(s):** (BIOC 201 and EBIO 202)  
**Description:** This course is designed to give students a broad overview of conservation biology. Lecture and discussions will focus on conservation issues such as biodiversity, extinction, management, sustained yield, invasive species and preserve design. Graduate/Undergraduate Equivalency: EBIO 323. Mutually Exclusive: Credit cannot be earned for EBIO 523 and EBIO 323.

EBIO 524 - CONSERVATION BIOLOGY LAB  
**Short Title:** CONSERVATION BIOLOGY LAB  
**Department:** Biosciences  
**Grade Mode:** Standard Letter  
**Course Type:** Laboratory  
**Credit Hours:** 3  
**Restrictions:** Enrollment is limited to Graduate level students.  
**Course Level:** Graduate  
**Prerequisite(s):** (EBIO 213 and EBIO 323 (may be taken concurrently))  
**Description:** This course will give students hands-on experiences in the practice of conservation biology through authentic projects related to prioritization and design of nature preserves, restoration of natural environments, and for monitoring threatened and endangered species in the Houston area. Graduate/Undergraduate Equivalency: EBIO 324. Mutually Exclusive: Credit cannot be earned for EBIO 524 and EBIO 324.

EBIO 525 - ECOLOGY  
**Short Title:** ECOLOGY  
**Department:** Biosciences  
**Grade Mode:** Standard Letter  
**Course Type:** Lecture  
**Credit Hours:** 3  
**Restrictions:** Enrollment is limited to Graduate level students.  
**Course Level:** Graduate  
**Prerequisite(s):** BIOC 201 and EBIO 202  
**Description:** Study of population dynamics, species interactions, plant and animal community organization, and ecosystem function. Graduate/Undergraduate Equivalency: EBIO 325. Mutually Exclusive: Credit cannot be earned for EBIO 525 and EBIO 325.

EBIO 529 - ANIMAL BIOLOGY AND PHYSIOLOGY  
**Short Title:** ANIMAL BIOLOGY AND PHYSIOLOGY  
**Department:** Biosciences  
**Grade Mode:** Standard Letter  
**Course Type:** Lecture  
**Credit Hours:** 3  
**Restrictions:** Enrollment is limited to Graduate level students.  
**Course Level:** Graduate  
**Prerequisite(s):** BIOC 201 or EBIO 202  
**Description:** The evolution and systematics of the animal kingdom with consideration of functional anatomy, comparative physiology, behavior, medical implications and resource management. Graduate/Undergraduate Equivalency: EBIO 329. Mutually Exclusive: Credit cannot be earned for EBIO 529 and BIOC 329/EBIO 329.

EBIO 540 - GLOBAL BIOGEOCHEMICAL CYCLES  
**Short Title:** GLOBAL BIOGEOCHEMICAL CYCLES  
**Department:** Biosciences  
**Grade Mode:** Standard Letter  
**Course Type:** Lecture  
**Credit Hours:** 3  
**Restrictions:** Enrollment is limited to Graduate level students.  
**Course Level:** Graduate  
**Description:** This course introduces students to the coupled nature of the biosphere, atmosphere and hydrosphere using as focal points elemental cycles such as those of carbon and nitrogen. This is a writing-intensive class, and will include 3 required Saturday field trips. Graduate/Undergraduate Equivalency: EBIO 340. Mutually Exclusive: Credit cannot be earned for EBIO 540 and EBIO 340.
EBIO 541 - RESEARCH SEMINAR IN ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: RESEARCH SEMINAR
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Repeatable for Credit.

EBIO 542 - RESEARCH SEMINAR IN ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: RESEARCH SEMINAR
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Research
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Repeatable for Credit.

EBIO 555 - CURRENT TOPICS IN WOLF CONSERVATION
Short Title: WOLF CONSERVATION
Department: Biosciences
Grade Mode: Satisfactory/Unsatisfactory
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: This course will provide an overview of the biology of wolves, their effects on ecosystems, the history of their management, and the current state of their conservation in the United States. Instructor Permission Required.

EBIO 560 - ENVIRONMENTAL IMPACT STATEMENTS AND PERMITTING
Short Title: EIS AND PERMITTING
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: This course is an exciting review of the methodologies involved in conducting Environmental Impact Statements for project permitting under the National Environmental Policy Act (NEPA). EISs have to be conducted before permitting is secured for large infrastructure projects, such as power plants, highways, pipelines, dams, mines, airports, incinerators and landfills.
Course URL: profms.rice.edu

EBIO 561 - TOPICS IN EVOLUTION
Short Title: TOPICS IN EVOLUTION
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Review and discussion of the literature on current research in evolution. Repeatable for Credit.

EBIO 562 - TOPICS IN BEHAVIORAL BIOLOGY
Short Title: TOPICS IN BEHAVIORAL BIOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Review and discussion of the literature on current research in animal behavior and evolution. Recommended prerequisite(s): Graduate standing or permission of chair or instructor. Repeatable for Credit.

EBIO 563 - TOPICS IN ECOLOGY
Short Title: TOPICS IN ECOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Review and discussion of the literature on current research in ecology. Repeatable for Credit.

EBIO 566 - APPLIED PHYCOLOGY
Short Title: APPLIED PHYCOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: This course provides an overview of methods of algal strain selection and cultivation for food, fodder, fertilizers, biofuels, pharmaceuticals, and cosmetics. Graduate/Undergraduate Equivalency: EBIO 366. Mutually Exclusive: Credit cannot be earned for EBIO 566 and EBIO 366.

EBIO 568 - TOPICS IN BIOLOGICAL DIVERSITY
Short Title: TOPICS IN BIOLOGICAL DIVERSITY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Review and discussion of literature on current research in biological diversity. Repeatable for Credit.

EBIO 569 - CORE COURSE IN ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: CORE COURSE IN ECOLOGY & EVOL
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Survey of topics in ecology and evolution taught by all EEB faculty.
EBIO 570 - ECOSYSTEM MANAGEMENT
Short Title: ECOSYSTEM MANAGEMENT
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: This course will focus on applied ecosystem topics including relations with state and federal agencies, field studies, wetland delineations, permitting compliance, and environmental regulations. Graduate/Undergraduate Equivalency: EBIO 270. Mutually Exclusive: Credit cannot be earned for EBIO 570 and EBIO 270.

EBIO 572 - CORAL REEF ECOSYSTEMS
Short Title: CORAL REEF ECOSYSTEMS
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Prerequisite(s): EBIO 202
Description: This three credit lecture course introduces students to a complex, dynamic and sensitive ecosystem: coral reefs. We will explore the biotic and abiotic components of coral reefs; how reef organisms interact with each other and the environment, and the factors that contribute to reef construction and decline over time and space. Graduate/Undergraduate Equivalency: EBIO 372. Mutually Exclusive: Credit cannot be earned for EBIO 572 and EBIO 372.

EBIO 579 - LAB MODULE IN AQUATIC ECOLOGY WITH SCUBA
Short Title: LAB MOD AQU ECOLOGY WITH SCUBA
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Students will learn some fundamentals of aquatic ecosystems and conduct lab exercises that involve SCUB-based fieldwork in a nationally recognized freshwater dive site. Course has required meetings outside of regular class time. Prerequisites: LPAP 194 or proof of Open Water Scuba certification from a professional organization (e.g., PADI, NAUI). A course fee ranging from $300 to $535 is associated with the class. Please send all enrollment requests to Mariah McClarty, mam22@rice.edu. You will be notified of enrollment decisions by December 5th. Department Permission Required. Graduate/Undergraduate Equivalency: EBIO 379. Recommended Prerequisite(s): EBIO 213 and LPAP 194. Mutually Exclusive: Credit cannot be earned for EBIO 579 and EBIO 379.

EBIO 580 - SUSTAINABILITY DEVELOPMENT AND REPORTING
Short Title: SUSTAINABILITY DEVELOPMENT
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Sustainable development is an approach to development based on interacting social, economic, and environmental forces. It is intended as methodology for planning, and a guiding principle for Environmental Health and safety compliance (EHSs) and Corporate Sustainability (CSRs). Students will learn compliance guidelines, risk management, and assessment considerations. Graduate/Undergraduate Equivalency: EBIO 280. Mutually Exclusive: Credit cannot be earned for EBIO 580 and EBIO 280/EBIO 480.

EBIO 581 - EEB OUTREACH DEVELOPMENT
Short Title: EEB OUTREACH DEVELOPMENT
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: This course is for Rice students interested in developing life science outreach initiatives that target underserved K-12 students in the Houston area. Goals of the course include developing hands-on teaching modules related to Texas science education standards and expanding graduate student teaching experiences beyond the University setting.

EBIO 585 - GRADUATE SEMINAR IN ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: GRAD SEM IN ECOL & EVOL BIOL
Department: Biosciences
Grade Mode: Satisfactory/Unsatisfactory
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Faculty and student presentations on current research. Repeatable for Credit.

EBIO 586 - GRADUATE SEMINAR/ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: GRAD SEM: ECOL & EVOL BIOLOGY
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hour: 1
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Continuation of EBIO 585. Repeatable for Credit.
EBIO 591 - GRADUATE TEACHING IN ECOLOGY AND EVOLUTIONARY BIOLOGY
Short Title: GRADUATE TEACHING IN EEB
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Internship/Practicum
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Repeatable for Credit.

EBIO 801 - EEB GRADUATE RESEARCH
Short Title: EEB GRADUATE RESEARCH
Department: Biosciences
Grade Mode: Standard Letter
Course Type: Research
Credit Hours: 1-15
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Repeatable for Credit.