Environmental Studies is an interdisciplinary field that explores the interconnection between humans and the natural environment. Modern environmental issues reflect the complex interactions of natural and social systems at global and local scales, and the resulting impacts on the Earth have led many to ask whether humankind has entered into a new epoch in the planet's history, one in which humans are now a key driver in the change of Earth systems.

The Environmental Studies program fosters the critical, integrative thinking required to better understand the complexities of this human-nature relationship and the resultant scales of impact, and to assess and develop solutions that meet intergenerational human needs without compromising the natural systems upon which humans depend.

The Environmental Studies program offers an undergraduate minor in Environmental Studies and several interdisciplinary courses for students interested in broadening their understanding of environmental issues. These courses often are team-taught by faculty from various areas of study.

**Minor**

- Minor in Environmental Studies (ga.rice.edu/programs-study/departments-programs/natural-sciences/environmental-studies/environmental-studies-minor)

Environmental Studies does not currently offer an academic program at the graduate level.

**Director**

Dominic Boyer

**Environmental Studies Minor Advisor**

Dominic Boyer

**ENST Steering Committee**

Jim Blackburn
Dominic Boyer
Richard Johnson
Jeff Kripal
Elizabeth Long
Julia Morgan
Timothy Morton
Evan Siemann
Albert Pope

*For Rice University degree-granting programs:
ENST 114 - NATURAL DISASTER SEMINAR  
Short Title: NATURAL DISASTER SEMINAR  
Department: Environmental Studies  
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: Seminar topics vary by term. Cross-list: ESCI 114. Repeatable for Credit.

ENST 117 - FRESHMAN SEMINAR IN LOCAL ENVIRONMENTAL SCIENCE RESEARCH  
Short Title: FRESHMAN ENVIRONMENTAL SEMINAR  
Department: Environmental Studies  
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 perspective environmental science researches to the excitement of research at Rice and in the broader Houston area, and to provide context with which to think about facts presented in textbooks. Small groups will meet weekly with a graduate student or postdoctoral researcher to explore a published research article by a local team of researchers, 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 feature article. Additional tours and activities TBA. All first year non-transfer students are eligible to enroll in ENST 117 regardless of AP credit. This course meets in the second half of the semester and features research in the Environmental Science Major.

ENST 201 - THE SCIENCE BEHIND EARTH GLOBAL WARMING AND CLIMATE CHANGE  
Short Title: SCIENCE BEHIND GLOBAL WARMING  
Department: Environmental Studies  
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: The course will introduce the students to the science behind last century Earth global warming in the context of the past records of global Earth climate variability and forecast of Earth climate in the next century. Cross-list: EBI 201.

ENST 202 - CULTURE, ENERGY, AND THE ENVIRONMENT: AN INTRODUCTION TO ENERGY HUMANITIES  
Short Title: CULTURE ENERGY & ENVIRONMENT  
Department: Environmental Studies  
Grade Mode: Standard Letter  
Course Type: Lecture  
Distribution Group: Distribution Group I  
Credit Hours: 3  
Restrictions: Graduate level students may not enroll.  
Course Level: Undergraduate Lower-Level  
Description: Humanity faces extraordinary challenges in an era of climate change and energy transition. These challenges are not only technological but also questions of value, power, behavior, and understanding. This course draws upon new research across the arts, humanities and social sciences to help students better understand the cultural and social dimensions of our current patterns of energy use, their environmental impacts, and the possibility of new energy futures. Intended for both STEM majors and humanities and social science students. Cross-list: HUMA 202.

ENST 204 - ENVIRONMENTAL SUSTAINABILITY: THE DESIGN & PRACTICE OF COMMUNITY AGRICULTURE  
Short Title: COMMUNITY GARDEN  
Department: Environmental Studies  
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: EBI 204. Repeatable for Credit.

ENST 265 - GREEN WORLDS: SCIENCE FICTION AND THE ENVIRONMENT  
Short Title: SCI FI AND THE ENVIRONMENT  
Department: Environmental Studies  
Grade Mode: Standard Letter  
Course Type: Seminar  
Credit Hours: 1-3  
Restrictions: Graduate level students may not enroll.  
Course Level: Undergraduate Lower-Level  
Description: Examines the ways that science fiction has expressed and challenged ideas about nature, culture, society and politics and imagined alternative 'green' worlds. Will focus on authors such as Margaret Atwood, Octavia Butler and Paolo Bacigalupi: films such as "Wall-E" and "Avatar": and accessible secondary criticism. Cross-list: ENGL 269.
ENST 281 - ENGINEERING SOLUTIONS FOR SUSTAINABLE COMMUNITIES  
Short Title: ENGRG SUSTAINABLE COMMUNITIES  
Department: Environmental Studies  
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: Students will work in teams to develop sustainable solutions for energy or environmental problems affecting our Houston and Rice communities. Emphasis will be placed on the integration of engineering fundamentals with societal issues, environmental and safety considerations, sustainability and professional communications. Prerequisites: introductory engineering courses, or permission of instructor. Cross-list: CHBE 281.

ENST 302 - ENVIRONMENTAL ISSUES: RICE INTO THE FUTURE  
Short Title: ENVIRON ISSUES: RICE IN FUTURE  
Department: Environmental Studies  
Grade Mode: Standard Letter  
Course Type: Laboratory  
Distribution Group: Distribution Group III  
Credit Hours: 3  
Restrictions: Graduate level students may not enroll.  
Course Level: Undergraduate Upper-Level  
Description: Students use the campus as a laboratory for learning about sustainability through group projects to reduce Rice's environmental impact or resolve environmental issues. Cross-list: SOCI 304.

ENST 307 - ENERGY AND THE ENVIRONMENT  
Short Title: ENERGY AND THE ENVIRONMENT  
Department: Environmental Studies  
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 explores the physical principles of energy use and its impacts on Earth's environment and climate. Topics will include energy mechanics, climate change, and the environmental impacts and future prospects of various fossil fuel and alternative energy sources. Cross-list: CEVE 307, ESCI 307. Recommended Prerequisite(s): MATH 101 and PHYS 101 or PHYS 111.

ENST 313 - SUSTAINABLE DESIGN  
Short Title: CASE STUDIES IN SUSTAIN DESIGN  
Department: Environmental Studies  
Grade Mode: Standard Letter  
Course Type: Seminar  
Credit Hours: 3  
Restrictions: Graduate level students may not enroll.  
Course Level: Undergraduate Upper-Level  
Description: This course will explore sustainable design from initial sustainable facility concepts and team organizations, to enlisting community support and process assessment. The course will develop into details about sustainable design, lessons learned, processes and outcomes. Space is limited and registration does not guarantee a space in this course. The final course roster is formulated on the first day class by the individual instructor. Cross-list: ARCH 313. Graduate/Undergraduate Equivalency: ENST 613. Mutually Exclusive: Credit cannot be earned for ENST 313 and ENST 613.

ENST 315 - ENVIRONMENTAL HEALTH  
Short Title: ENVIRONMENTAL HEALTH  
Department: Environmental Studies  
Grade Mode: Standard Letter  
Course Type: Lecture  
Credit Hours: 3  
Restrictions: Graduate level students may not enroll.  
Course Level: Undergraduate Upper-Level  
Prerequisite(s): (BIOS 201 or BIOC 201) and (BIOS 202 or EBBIO 202)  
Description: An overview of environmental health issues including discussion of epidemiologic methods, illnesses caused or exacerbated by environmental exposures, and the role of research in driving effective policies to protect and promote public health. The class includes numerous guest lectures by area experts (physicians, researchers, community activists, policymakers and others); a bus tour featuring disproportionately affected neighborhoods as well as cutting-edge "green" initiatives; original student research projects; and an opportunity to address the Houston City Council. The dynamic between research and action, i.e., "making a difference," is stressed. FORMERLY ENST 314.

ENST 316 - ENVIRONMENTAL FILM  
Short Title: ENVIRONMENTAL FILM  
Department: Environmental Studies  
Grade Mode: Standard Letter  
Course Type: Seminar  
Credit Hours: 3  
Restrictions: Graduate level students may not enroll.  
Course Level: Undergraduate Upper-Level  
Description: Explores the ways film represents the environment and environmental issues (food, water, energy, waste, environmental justice, sustainability), and both expresses and shapes environmental values. We will view and analyze a variety of genres, as well as reading supplementary material. Cross-list: SOCI 316.

ENST 321 - CASE STUDIES IN SUSTAINABILITY: THE HIGH PERFORMANCE BUILDING  
Short Title: SUSTAINABILITY CASE STUDIES  
Department: Environmental Studies  
Grade Mode: Standard Letter  
Course Type: Seminar  
Credit Hours: 3  
Restrictions: Graduate level students may not enroll.  
Course Level: Undergraduate Upper-Level  
Description: The project-based seminar will provide a means by which all those with an interest in the building science entailed in the design of commercial, institutional, and residential structures can investigate common issues, obtain information, discuss local strategies, and otherwise address subjects relating to building or campus performance over its lifecycle. To develop an approach of taking an existing Rice University building an optimizing its use via "repositioning" or redesign the class will create an interdisciplinary forum where students of architecture, engineering (structural, mechanical, etc.), and human sciences will potentially collaborate with professional building consultants, materials manufacturers, contractors, developers, owners, and Rice campus facility managers Cross-list: ARCH 321. Graduate/Undergraduate Equivalency: ENST 621. Mutually Exclusive: Credit cannot be earned for ENST 321 and ENST 621.
ENST 322 - CASE STUDIES IN SUSTAINABILITY: THE REGENERATIVE REPOSITIONING OF NEW OR EXISTING RICE CAMPUS BU
Short Title: CASE STUDIES IN SUSTAINABILITY
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: This course will explore application of high performance, sustainable design to specific Rice University campus and facility targets. In partnership with Rice University leadership, the team effort will develop "regenerative redesign" approaches based on investigation of other campuses' case study. Space is limited and registration does not guarantee a space in this course. The final course roster is formulated on the first day of class by the individual instructor. Cross-list: ARCH 322. Graduate/Undergraduate Equivalency: ENST 622. Mutually Exclusive: Credit cannot be earned for ENST 322 and ENST 622.

ENST 323 - CONSERVATION BIOLOGY
Short Title: CONSERVATION BIOLOGY
Department: Environmental Studies
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: EBIO 323.

ENST 331 - ENVIRONMENTAL POLITICS AND POLICY
Short Title: ENVIRONMENT POLITICS & POLICY
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: The course considers the major issues in the increasingly important public policy area of the environment. It emphasizes the American experience, but also considers certain international aspects of these issues. Cross-list: POLI 331.

ENST 332 - THE SOCIAL LIFE OF CLEAN ENERGY
Short Title: SOCIAL LIFE OF CLEAN ENERGY
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: This course considers the phenomenon of renewable energy, using a social scientific approach to analyze the various forces and interests involved in the development of renewable energy projects (such as hydropower, solar and wind) in both the global North and South. No prerequisites required. Cross-list: ANTH 332.

ENST 340 - GLOBAL BIOGEOCHEMICAL CYCLES
Short Title: GLOBAL BIOGEOCHEMICAL CYCLES
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Lecture/Laboratory
Distribution Group: Distribution Group III
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
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. Cross-list: EBIO 340, ESCI 340.

ENST 350 - ENVIRONMENTAL INTERNSHIP
Short Title: ENVIRONMENTAL INTERNSHIP
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Internship/Practicum
Credit Hours: 1-6
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: Provides enrollment credit for approved internships with environmental organizations or agencies. Students must seek approval prior to beginning the internship. Weekly progress reports and a final paper are required. Instructor Permission Required.

ENST 357 - ENVIRONMENTAL SOCIOLOGY
Short Title: ENVIRONMENTAL SOCIOLOGY
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group II
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: This course focuses on the foundations of environmental sociology and takes a social and historical approach to examine how humans affect the environment and the environment affects humans. Topics include: agricultural sustainability, resource extraction and climate changes; environmental racism/sexism; globalization and development; population, and consumption, and environmental movements. Cross-list: SOCI 367.

ENST 358 - LITERATURE AND THE ENVIRONMENT
Short Title: LITERATURE & THE ENVIRONMENT
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Lecture
Distribution Group: Distribution Group I
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: A course that asks the question: How does literature express or shape environmental values? In this class we will read American fiction and nonfiction exploring the relationship between human and nonhuman nature. Cross-list: ENGL 368.
ENST 406 - INTRODUCTION TO ENVIRONMENTAL LAW

Short Title: INTRO TO ENVIRONMENTAL LAW
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Graduate Upper-Level

Description: Introduction to Environmental Law is intended to introduce the student to the methods used by the United States and the international community to regulate and/or allocate air, water and land resources. A key focus of this course will be the emerging area of the law of sustainable development, including the implementation of full price costing, life cycle analysis, carbon cycle analysis, allocation of assimilative capacity and other similar issues. Cross-list: CEVE 406.
ENST 477 - SPECIAL TOPICS
Short Title: SPECIAL TOPICS
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Internship/Practicum, Lecture, Laboratory, Seminar
Credit Hours: 1-4
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Description: Topics and credit hours may vary each semester. Contact Department for current semester's topic. Repeatable for Credit.

ENST 480 - ENVIRONMENTAL AND ENERGY ECONOMICS
Short Title: ENVIRONMENTAL ECONOMICS
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Lecture
Credit Hours: 3
Restrictions: Graduate level students may not enroll.
Course Level: Undergraduate Upper-Level
Prerequisite(s): ECON 200 or ECON 301 or ECON 370
Description: Uses economic theories of externalities and common property resources to analyze how markets, legal institutions, regulations, taxes and subsidies, and voluntary activity can affect the supply of environmental amenities, such as clean air, clean water, and wilderness areas. Also discusses methods for determining the demand for environmental amenities. Cross-list: ECON 480.

ENST 513 - SEMINAR: TOPICS RELATED TO THE EARTH'S DEEP INTERIOR
Short Title: SEM: EARTH'S DEEP INTERIOR
Department: Environmental Studies
Grade Mode: Satisfactory/Unsatisfactory
Course Type: Seminar
Credit Hours: 1-3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Seminar topics may vary. Readings and discussions about current topics related to the processes governing the Earth's deep interior. General themes include mantle convection, thermal evolution, and volatiles. Repeatable for Credit.

ENST 613 - CASE STUDIES IN SUSTAINABLE DESIGN
Short Title: SUSTAINABLE DESIGN
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Cross-list: ARCH 613. Graduate/Undergraduate Equivalency: ENST 313. Mutually Exclusive: Credit cannot be earned for ENST 613 and ENST 313.

ENST 621 - CASE STUDIES IN SUSTAINABILITY: THE HIGH PERFORMANCE BUILDING
Short Title: SUSTAINABILITY CASE STUDIES
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: The project-based seminar will provide a means by which all those with an interest in the building science entailed in the design of commercial, institutional, and residential structures can investigate common issues, obtain information, discuss local strategies, and otherwise address subjects relating to building or campus performance over its lifecycle. To develop an approach of taking an existing Rice University building an optimizing its use via "repositioning" or redesign the class will create an interdisciplinary forum where students of architecture, engineering (structural, mechanical, etc.), and human sciences will potentially collaborate with professional building consultants, materials manufactures, contractors, developers, owners, and Rice campus facility managers Cross-list: ARCH 621. Graduate/Undergraduate Equivalency: ENST 321. Mutually Exclusive: Credit cannot be earned for ENST 621 and ENST 321.

ENST 622 - CASE STUDIES IN SUSTAINABILITY: THE REGENERATIVE REPOSITIONING OF NEW OR EXISING RICE CAMPUS BU
Short Title: CASE STUDIES IN SUSTAINABILITY
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: This course will explore application of high performance, sustainable design to specific Rice University campus and facility targets. In partnership with Rice University leadership, the team effort will develop "regenerative redesign" approaches based on investigation of other campuses' case study. Space is limited and registration does not guarantee a space in this course. The final course roster is formulated on the first day of class by the individual instructor. Cross-list: ARCH 622. Graduate/Undergraduate Equivalency: ENST 322. Mutually Exclusive: Credit cannot be earned for ENST 622 and ENST 322.

ENST 646 - ADVANCED TOPICS IN BIOMEDICAL ANTHROPOLOGY
Short Title: ADV BIOMEDICAL ANTHROPOLOGY
Department: Environmental Studies
Grade Mode: Standard Letter
Course Type: Seminar
Credit Hours: 3
Restrictions: Enrollment is limited to Graduate level students.
Course Level: Graduate
Description: Seminar on contemporary research on the biomedical aspects of human health and disease. Includes topics from medical ecology and epidemiology. Cross-list: ANTH 646. Recommended Prerequisite(s): ANTH 381 or ANTH 581.

Descriptions and Codes Legend
Note: Internally, the university uses the following descriptions, codes, and abbreviations for this academic program. The following is a quick reference:

Course Catalog/Schedule
- Course offerings/subject code: ENST
Program Description and Code
• Environmental Studies: ENST

Undergraduate Minor Description and Code
• Minor in Environmental Studies: ENST