Environmental Economics and Policy

Bachelor of Arts (BA) or Bachelor of Science (BS)

The Rausser College of Natural Resources and the College of Letters & Science jointly offer the undergraduate major in Environmental Economics and Policy (EEP). This major offers an opportunity to explore aspects of economic and political institutions that affect the development and management of natural resources and the environment. The program takes a problem-solving approach to issues involving renewable and fixed natural resources, and it is based on a foundation in microeconomic theory and the economics of resources and the environment. The environmental economics and policy program is offered by the Department of Agricultural and Resource Economics.

This major leads to a Bachelor of Science (BS) degree (for students in Rausser College) or a Bachelor of Arts (BA) degree (for students in the College of Letters & Science).

Students who graduate with a degree in environmental economics and policy go on to a variety of jobs or graduate programs.

Admission to the Major

Advice on admission for freshmen and transfer students can be found on Rausser College’s Admissions Guide website (http://guide.berkeley.edu/undergraduate/colleges-schools/natural-resources/admissionstext) or Rausser College's Prospective Student website (https://nature.berkeley.edu/prospective-students/). Freshman students may apply directly to the major or may select Rausser College’s undeclared option, and declare the major by the end of their fourth semester. Transfer students may apply directly to the major through Rausser College (B.S. degree) and, if admitted, be declared as EEP majors. Transfers may also apply to the major through the College of Letters & Science (B.A. degree) but, if admitted, will be undeclared.

Information for current Berkeley students who would like to declare the major after admission, including information on a change of major or change of college, please see Chapter 6 of the Rausser College Undergraduate Student Handbook.

Honors Program

Students with a GPA of 3.6 or higher may enroll in Rausser College’s honors program (H196) once they have reached upper division standing. To fulfill the program requirements, students design, conduct, and report on an individual research project, working with a faculty sponsor. For further information about registration for the honors symposium or the honors requirements, please see Rausser College’s website (http://nature.berkeley.edu/site/honors_program.php).

Minor Program

The minor program offers interested students an opportunity to explore aspects of economic and political institutions that affect the development and management of natural resources and the environment. For information regarding how to declare the minor, please contact the department.

In addition to the University, campus, and college requirements, listed on the College Requirements tab, students must fulfill the below requirements specific to their major program.

General Guidelines

1. All courses taken to fulfill the major requirements below must be taken for graded credit, other than courses listed which are offered on a Pass/No Pass basis only. Other exceptions to this requirement are noted as applicable.

2. A minimum cumulative grade point average (GPA) of 2.0 is required.

3. A minimum GPA of 2.0 in upper division major requirements is required.

4. At least 15 of the 36 required upper division units must be taken in the Rausser College of Natural Resources.

5. A maximum of 16 units of independent study (courses numbered 97, 98, 99, 197, 198, and 199) may count toward graduation, with a maximum of 4 units of independent study per semester.

6. No more than 1/3 of the total units attempted at UC Berkeley may be taken Pass/No Pass. This includes units in the Education Abroad Program and UC Intercampus Visitor or Exchange Programs.

7. A maximum of 4 units of physical education courses will count toward graduation.

For information regarding residence requirements and unit requirements, please see the College Requirements tab.

Lower Division Requirements

Principles of microeconomics, select one of the following:

- ENVECON C1 Introduction to Environmental Economics and Policy [4]
- ECON 1 Introduction to Economics [4]
- ECON 2 Introduction to Economics--Lecture Format [4]

Calculus, select one of the following sequences:

- MATH 1A Calculus
- & MATH 1B and Calculus
- MATH 16A Analytic Geometry and Calculus
- & MATH 16B and Analytic Geometry and Calculus

Statistics, select one of the following:


Upper Division Requirements

Intermediate microeconomics, select one of the following:

- ENVECON 100 Intermediate Microeconomics with Applications to Sustainability [4]
- ECON 100A Microeconomics [4]
- ECON 101A Microeconomics (Math Intensive) [4]

Environmental or natural resource economics

- ENVECON C101 Environmental Economics
- or ENVECON CNatural Resource Economics

Quantitative methods:

- ENVECON C1 Introductory Applied Econometrics [4]
Upper division electives
Select five courses

<table>
<thead>
<tr>
<th>MATH 1A</th>
<th>Calculus &amp; MATH 1B</th>
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 Minor Requirements

Principles of microeconomics, select one of the following:
- ENVECON 100 Introduction to Environmental Economics and Policy [4]
- ECON 1 Introduction to Economics [4]
- ECON 2 Introduction to Economics--Lecture Format [4]

Intermediate microeconomics, select one of the following:
- ENVECON 100 Intermediate Microeconomics with Applications to Sustainability [4]
- ECON 100A Microeconomics [4]
- ECON 101A Microeconomics (Math Intensive) [4]

Environmental and natural resource economics
- ECON C125 Natural Resource Economics [4]

Quantitative methods, select one of the following:
- ENVECON/ESPM C183 Forest Ecosystem Management [4]
- ECON C110/ POL SCI C135 Game Theory in the Social Sciences [4]
- ECON 140 Econometrics [4]
- ECON 141 Econometrics (Math Intensive) [4]
- ESPM 102B Natural Resource Sampling [2]
- STAT 131A Course Not Available [4]

Natural resource analysis and policy, select one of the following:
- ENVECON 131 Globalization and the Natural Environment [3]
- ENVECON 140 Economics of Race, Agriculture, and the Environment [3]
- ENVECON 142 Industrial Organization with Applications to Agriculture and Natural Resources [4]
- ENVECON 143 Economics of Innovation and Intellectual Property [4]
- ENVECON 147 Regulation of Energy and the Environment [4]
- ENVECON C16 Development Economics [4]
- ENVECON 152 Advanced Topics in Development and International Trade [3]
- ENVECON 154 Economics of Poverty and Technology [3]
- ENVECON 156 Economics of Water Resources [3]
- ENVECON C17 Natural Resource Economics [4]
- ENVECON C18 International Trade [4]
- ENVECON C19 Forest Ecosystem Management [4]

Students who have a strong interest in an area of study outside their major often decide to complete a minor program. These programs have set requirements and are noted officially on the transcript in the memoranda section, but they are not noted on diplomas.

General Guidelines

1. All minors must be declared no later than one semester before a student's Expected Graduation Term (EGT). If the semester before EGT is fall or spring, the deadline is the last day of RRR week. If the semester before EGT is summer, the deadline is the final Friday of Summer Sessions. To declare a minor, contact the department advisor for information on requirements, and the declaration process.

2. All courses taken to fulfill the minor requirements below must be taken for graded credit.

3. A minimum grade point average (GPA) of 2.0 is required for courses used to fulfill the minor requirements.

4. No more than one upper division course may be used to simultaneously fulfill requirements for a student's major and minor programs.

At least one of the five upper division courses below must be taken during the academic year (i.e., not all courses may be Summer Session courses).

Lower Division Prerequisite

Select one of the following sequences:

MATH 16A Analytic Geometry and Calculus
& MATH 16B Analytic Geometry and Calculus
Undergraduate students must fulfill the following requirements in addition to those required by their major program.

For detailed lists of courses that fulfill college requirements, please review the College of Letters & Sciences (http://guide.berkeley.edu/undergraduate/colleges-schools/letters-science/) page in this Guide. For College advising appointments, please visit the L&S Advising (https://lsadvising.berkeley.edu/home/) Pages.

**University of California Requirements**

**Entry Level Writing** (http://writing.berkeley.edu/node/78/)

All students who will enter the University of California as freshmen must demonstrate their command of the English language by fulfilling the Entry Level Writing requirement. Fulfillment of this requirement is also a prerequisite to enrollment in all reading and composition courses at UC Berkeley.

American History and American Institutions (http://guide.berkeley.edu/undergraduate/colleges-schools/letters-science/american-history-institutions-requirement/)

The American History and Institutions requirements are based on the principle that a US resident graduated from an American university, should have an understanding of the history and governmental institutions of the United States.

**Berkeley Campus Requirement**

American Cultures (http://americancultures.berkeley.edu/students/courses/)

All undergraduate students at Cal need to take and pass this course in order to graduate. The requirement offers an exciting intellectual environment centered on the study of race, ethnicity and culture of the United States. AC courses offer students opportunities to be part of research-led, highly accomplished teaching environments, grappling with the complexity of American Culture.

**College of Letters & Science Essential Skills Requirements**

Quantitative Reasoning (http://guide.berkeley.edu/undergraduate/colleges-schools/letters-science/quantitative-reasoning-requirement/)

The Quantitative Reasoning requirement is designed to ensure that students graduate with basic understanding and competency in math, statistics, or computer science. The requirement may be satisfied by exam or by taking an approved course.

Foreign Language (http://guide.berkeley.edu/undergraduate/colleges-schools/letters-science/foreign-language-requirement/)

The Foreign Language requirement may be satisfied by demonstrating proficiency in reading comprehension, writing, and conversation in a foreign language equivalent to the second semester college level, either by passing an exam or by completing approved course work.

Reading and Composition (http://guide.berkeley.edu/undergraduate/colleges-schools/letters-science/reading-composition-requirement/)

In order to provide a solid foundation in reading, writing, and critical thinking the College requires two semesters of lower division work in composition in sequence. Students must complete parts A & B reading and composition courses by the end of their second semester and a second-level course by the end of their fourth semester.

**College of Letters & Science 7 Course Breadth Requirements**

Breadth Requirements (http://guide.berkeley.edu/undergraduate/colleges-schools/letters-science/#breadthrequirementstext)

The undergraduate breadth requirements provide Berkeley students with a rich and varied educational experience outside of their major program. As the foundation of a liberal arts education, breadth courses give students a view into the intellectual life of the University while introducing them to a multitude of perspectives and approaches to research and scholarship. Engaging students in new disciplines and with peers from other majors, the breadth experience strengthens interdisciplinary connections and context that prepares Berkeley graduates to understand and solve the complex issues of their day.

**Unit Requirements**

- 120 total units
- Of the 120 units, 36 must be upper division units
- Of the 36 upper division units, 6 must be taken in courses offered outside your major department

**Residence Requirements**

For units to be considered in "residence," you must be registered in courses on the Berkeley campus as a student in the College of Letters & Science. Most students automatically fulfill the residence requirement by attending classes here for four years. In general, there is no need to be concerned about this requirement, unless you go abroad for a semester or year or want to take courses at another institution or through UC Extension during your senior year. In these cases, you should make an appointment to meet an adviser to determine how you can meet the Senior Residence Requirement.

Note: Courses taken through UC Extension do not count toward residence.

**Senior Residence Requirement**

After you become a senior (with 90 semester units earned toward your BA degree), you must complete at least 24 of the remaining 30 units in residence in at least two semesters. To count as residence, a semester must consist of at least 6 passed units. Intercampus Visitor, EAP, and UC Berkeley-Washington Program (UCDC) units are excluded.

You may use a Berkeley Summer Session to satisfy one semester of the Senior Residence requirement, provided that you successfully complete 6 units of course work in the Summer Session and that you have been enrolled previously in the college.

**Modified Senior Residence Requirement**

Participants in the UC Education Abroad Program (EAP), Berkeley Summer Abroad, or the UC Berkeley Washington Program (UCDC) may meet a Modified Senior Residence requirement by completing 24 (excluding EAP) of their final 60 semester units in residence. At least 12 of these 24 units must be completed after you have completed 90 units.
Upper Division Residence Requirement
You must complete in residence a minimum of 18 units of upper division courses (excluding UCEAP units), 12 of which must satisfy the requirements for your major.

Reading and Composition (http://guide.berkeley.edu/undergraduate/colleges-schools/natural-resources/reading-composition-requirement/)

In order to provide a solid foundation in reading, writing and critical thinking all majors in the College require two semesters of lower division work in composition. Students must complete a first-level reading and composition course by the end of their first semester and a second-level course by the end of their fourth semester.

Foreign Language (http://guide.berkeley.edu/undergraduate/colleges-schools/natural-resources/foreign-language-requirement/): EEP Majors only

The Foreign Language requirement is only required by Environmental Economics and Policy (EEP) majors. It may be satisfied by demonstrating proficiency in reading comprehension, writing, and conversation in a foreign language equivalent to the second semester college level, either by passing an exam or by completing approved course work.

Quantitative Reasoning (http://guide.berkeley.edu/undergraduate/colleges-schools/natural-resources/quantitative-reasoning-requirement/): EEP Majors only

The Quantitative Reasoning requirement is only required by Environmental Economics and Policy (EEP) majors. The requirement may be satisfied by exam or by taking an approved course.

Undergraduate Breadth
Undergraduate breadth provide Berkeley students with a rich and varied educational experience outside of their major program and many students complete their breadth courses in their first two years. Breadth courses are built into the Rausser College major requirements and each major requires a different number of breath courses and categories. The EEP major is the only college major that requires the entire 7 course breadth. Refer to the major snapshots on each EEP major page (https://nature.berkeley.edu/advising/majors-minors/) for additional information.

High School Exam Credit

Unit Requirements
Students must complete at least 120 semester units of courses subject to certain guidelines:

- A maximum of 4 units of Physical Education from any school attended will count towards the 120 units.
- Students may receive unit credit for courses graded P (including P/NP units taken through EAP) up to a limit of one-third of the total units taken and passed on the Berkeley campus at the time of graduation. Courses taken for P/NP in the Spring 2020 semester will not count toward this limit.

Semester Unit Minimum
All Rausser College students must enroll in at least 12 units each fall and spring semester.

Semester Unit Maximum
To request permission to take more than 20.5 units in a semester, please see the major adviser.

Semester Limit
Students admitted as freshmen must graduate within 8 fall/spring semesters at UC Berkeley. Students admitted as transfer students must graduate within 4 fall/spring semesters at UC Berkeley. Students who go on EAP and UCDC can petition for additional semesters. Other UC-affiliated programs, such as the Gump Station in Moorea, may also be considered. Summer session, UC Extension and non-UC study abroad programs do not count towards this semester limit. Students approved for double majors or simultaneous degrees in two colleges may be granted an additional semester. Rausser College does not limit the number of total units a student can accrue.

Senior Residence Requirement
Once you achieve and exceed 90 units (senior status), you must complete at least 24 of the remaining 30 units in residence at the Rausser College of Natural Resources at over at least 2 semesters. To count as residence, a semester must consist of at least 6 passed units taken while the student is a member of Rausser. At least one of the two terms must be a fall or spring semester. Senior residence terms do not need to be completed consecutively. All courses offered on campus for the fall, spring, and summer terms by Berkeley departments and programs and all Berkeley online (W) courses count. Inter-campus Visitor, Education Abroad Program, UC Berkeley Washington Program, and UC Berkeley Extension units do not count toward this requirement. Students may use Summer Session to satisfy one semester of the Senior Residence Requirement, provided that 6 units of coursework are completed.

Modified Senior Residence Requirement
Participants in a fall, spring or summer UC Education Abroad Program (UCEAP), Berkeley Summer Abroad, or the UC Berkeley Washington Program may meet a modified Senior Residence Requirement by completing 24 of their final 60 semester units in residence (excluding UCEAP). At least 12 of these 24 units must be completed after senior status is reached. International travel study programs sponsored by Summer Sessions and education abroad programs offered outside of the UC system do not qualify for modified senior residence.

Most students automatically satisfy the residence requirement by attending classes here for four years. In general, there is no need to be concerned about this requirement, unless students go abroad for a semester or year or want to take courses at another institution or through University Extension during their senior year. In these cases, students
should make an appointment to see an adviser to determine how they can meet the Senior Residence Requirement.

Grade Requirements

- A 2.0 UC GPA is required for graduation.
- A 2.0 average in all upper division courses required of the major program is required for graduation.
- A grade of at least C- is required in all courses for the major. Major and minor coursework taken in Spring 2020, Fall 2020, and Spring 2021 may be completed with P/NP grading option. See more details below.

Changes in Policies and Procedures during the COVID-19 Pandemic

Fall 2020, Spring 2021, SUMMER 2021

After much consultation across the colleges of UC Berkeley, and via our college Executive Committee, the following decisions have been made about the selection of the P/NP grade option (CPN) by undergraduate students during the Fall 2020 & Spring 2021 semesters for the Rausser College of Natural Resources.

- College Course Requirements: Reading and Composition, Quantitative Reasoning, and Foreign Language requirements normally satisfied with letter grades may be met with a passed (P) grade during the Fall 2020 semester. This does not include the system-wide Entry Level Writing requirement. College Writing R1A must be taken for a letter grade and completed with a C or better to fulfill the Entry Level Writing requirement.

- Requirements to Graduate: No changes in policy.
  - Rausser College students must have at least a 2.0 cumulative UC GPA to declare a Rausser College major.
  - Non-Rausser College students must have at least a 3.0 cumulative UC GPA to change to or add a Rausser College major.
  - Students must have at least a 2.0 cumulative UC GPA to graduate, both overall and in the upper-division courses required for the major.

- Academic Probation: The terms for Academic Probation (AP) have been modified.
  - Rausser CNR students currently in good standing who earn all "P" grades will remain in good standing.
  - Students currently in good standing who earn NP grades, Incompletes, or failing letter grades for more than 50% of units will be placed on academic probation and will be required to meet with their college advisor and complete an Academic Success Plan for the subsequent semester.
  - Students on AP must take all coursework for letter grades. Students on AP may be removed from probationary status with their college advisor and complete an Academic Success Plan for the subsequent semester.

- Term Probation: Students in this category are placed on academic probation if their GPA falls below 1.5 in any fall or spring semester ("Term"). To get back into good standing, you must earn a UC Berkeley term GPA of 2.0 the following regular semester (fall/spring) and maintain an overall GPA of 2.0. If you fail to meet these conditions, you will be subject to dismissal from the University. For Fall 2020 & Spring 2021, the terms for Term Probation have been modified.
  - Rausser CNR students currently in good standing who earn all "P" grades will remain in good standing and will not be placed on Term Probation.
  - Transferring Credit: If you are taking coursework through another institution in Fall 2020 & Spring 2021, P grades earned will be accepted for all degree requirements. Note: This does not include the systemwide Entry Level Writing requirement. College Writing R1A must be taken for a letter grade and completed with a C or better to fulfill the Entry Level Writing requirement.

For additional information, please see Changes to Policies and Procedures for Fall 2020, Spring 2021, & Summer 2021 (https://nature.berkeley.edu/advising/AY-2020-2021-policy-adjustments/).

Spring 2020

In light of the substantial disruptions to instruction caused by the novel coronavirus emergency, the Berkeley Division of the Academic Senate made changes to grading options for the Spring 2020 semester. Rausser College adjusted college requirements as follows:

- College Course Requirements: All passing course work taken in Spring 2020 may be used for college requirements regardless of the grading option selected.

- Requirements to Graduate: To graduate, Rausser College students usually must have at least a 2.0 cumulative UC GPA to graduate, both overall and in the upper-division courses required for their major. For Spring 2020, students with at least a 1.9 cumulative GPA overall and in the upper-division courses required for their major to graduate will be considered as having met the requirement.

- Academic Probation: Recognizing the challenges to teaching and learning during the COVID-19 pandemic, Rausser College of Natural Resources will not be penalizing any students’ academic progress for Spring 2020.

- Students in good academic standing who earn all "P" grades will remain in good standing.

- Students, who are in good standing, who earn NP grades, Incompletes, or failing grades for more than 50% of units will be required to meet with their college advisor and complete an Academic Success Plan for Fall 2020 by September 11, 2020, but will not be placed on Academic Probation.
• Students on Academic Probation may be removed from probationary status with sufficient letter graded coursework to raise their cumulative GPA above 2.0.

• Students on Academic Probation who do not attain sufficient letter-graded coursework to be removed from AP (i.e., enough grade points to raise cumulative GPA above 2.0 cumulative GPA) will remain on AP for Fall 2020 and must complete an Academic Success Plan with their college advisor by September 11, 2020.

• Term Probation: Recognizing the challenges to teaching and learning during the COVID-19 pandemic, Rausser College of Natural Resources will not be penalizing any students’ academic progress for Spring 2020.

• Students in good academic standing who earn all “P” grades will remain in good standing.

• Students on Term Probation, but not AP, may be removed from probationary status with passing grades in at least 50% of units for Spring 2020.

• Students on Term Probation at the start of Spring 2020 who earn NP, Incomplete, or failing grades for more than 50% of units must complete an Academic Success Plan with their college advisor by September 11, 2020 and will remain on Term Probation.

• Transferring Credit: If you are taking coursework through another institution in Spring 2020 (i.e., through Concurrent Enrollment or instead of being enrolled in Spring 2020 at UC Berkeley) and that institution has moved to a P/NP-default or P/NP-only grading model, P grades earned will be accepted for all degree requirements.

For additional information, please see Changes to Policies and Procedures for Spring 2020 (https://nature.berkeley.edu/advising/spring-2020-changing-policies-faq/).

Students are encouraged to familiarize themselves with the Environmental Economics and Policy major requirements before making a program plan. For more detailed information regarding the courses listed below (e.g., elective information, GPA requirements, etc.), see the College Requirements and Major Requirements tabs.

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**Accelerated Program Plans**

For students considering graduating in less than four years, it’s important to acknowledge the reasons to undertake such a plan of study. While there are advantages to pursuing a three-year degree plan such as reducing financial burdens, they are not for everyone and do involve sacrifices; especially with respect to participating in co-curricular activities, depth of study, and summer internships, which typically lead to jobs upon graduation. All things considered, please see the tables for three and three and a half year degree options.

1. This is a sample program plan. This plan assumes that the student has completed the Entry Level Writing and American History and Institutions requirements prior to admission.

2. Students are strongly advised to work with an academic advisor to determine a personal program plan. Your program plan will differ depending on previous credit received, your course schedule, and available offerings.

3. Any EEP course will satisfy the L&S Breadth area of Social and Behavior Sciences, one of seven breadth areas.

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### Learning Goals for the Major

1. Produce graduates with an excellent education in applied economics, with a particular expertise in one of three fields: environmental economics and policy; development economics, or agricultural economics.

2. Prepare students for successful careers and further studies in graduate programs in a variety of applied fields within economics.
3. Produce graduates who have the capacity for continued learning throughout their careers and who will have a significant, positive impact on their professions.

4. Encourage the development of the ethics, skills, and motivation necessary to serve society.

Major Maps help undergraduate students discover academic, co-curricular, and discovery opportunities at UC Berkeley based on intended major or field of interest. Developed by the Division of Undergraduate Education in collaboration with academic departments, these experience maps will help you:

- **Explore** your major and gain a better understanding of your field of study
- **Connect** with people and programs that inspire and sustain your creativity, drive, curiosity and success
- **Discover** opportunities for independent inquiry, enterprise, and creative expression
- **Engage** locally and globally to broaden your perspectives and change the world
- **Reflect** on your academic career and prepare for life after Berkeley

Use the major map below as a guide to planning your undergraduate journey and designing your own unique Berkeley experience.

View the Environmental Economics and Policy Major Map PDF. ([https://vcue.berkeley.edu/sites/default/files/environmental_economics_and_policy.pdf](https://vcue.berkeley.edu/sites/default/files/environmental_economics_and_policy.pdf))

### ENVECON C1 Introduction to Environmental Economics and Policy 4 Units

Terms offered: Fall 2021, Summer 2021 8 Week Session, Fall 2020

Introduction to microeconomics with emphasis on resource, agricultural, and environmental issues.

**Rules & Requirements**

**Prerequisites:** Mathematics 32

**Credit Restrictions:** Students will receive no credit for ECON C3 after completing ECON 1.

**Hours & Format**

- **Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week
- **Summer:** 8 weeks - 6 hours of lecture and 2 hours of discussion per week

**Additional Details**

- **Subject/Course Level:** Environmental Economics and Policy/Undergraduate
- **Grading/Final exam status:** Letter grade. Final exam required.

Also listed as: ECON C3

Introduction to Environmental Economics and Policy: Read Less [-]

### ENVECON 39D Freshman/Sophomore Seminar 1.5 - 4 Units

Terms offered: Fall 2009, Fall 2008

Freshman and sophomore seminars offer lower division students the opportunity to explore an intellectual topic with a faculty member and a group of peers in a small-seminar setting. These seminars are offered in all campus departments; topics vary from department to department and from semester to semester.

**Rules & Requirements**

- **Prerequisites:** Priority given to freshmen and sophomores
- **Repeat rules:** Course may be repeated for credit without restriction.

**Hours & Format**

- **Fall and/or spring:** 15 weeks - 1.5-4 hours of seminar per week

**Additional Details**

- **Subject/Course Level:** Environmental Economics and Policy/Undergraduate
- **Grading/Final exam status:** The grading option will be decided by the instructor when the class is offered. Final exam required.

Freshman/Sophomore Seminar: Read Less [-]
ENVECON 98 Directed Group Studies (for Lower Division Students) 1 - 3 Units
Terms offered: Spring 2001
Group study (or seminar) of a selected topic or topics in Environmental Economics and Policy.

Rules & Requirements
Prerequisites: Consent of Instructor
Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 1-3 hours of directed group study per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Directed Group Studies (for Lower Division Students): Read Less [-]

ENVECON 100 Intermediate Microeconomics with Applications to Sustainability 4 Units
Terms offered: Spring 2022, Fall 2021, Spring 2021
Covers the basic microeconomic tools for further study of natural resource problems. Theory of consumption, production, theory of the firm, industrial organization, general equilibrium, public goods and externalities. Applications to agriculture and natural resources.

Rules & Requirements
Prerequisites: C1 or Economics 1 or C3; and Mathematics 16A and 16B or Math 1A and 1B; or consent of instructor
Credit Restrictions: Students will receive no credit for Environmental Economics 100 after completing Economics 100A, Economics 101A, or Undergraduate Business Administration 110.

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week
Summer: 8 weeks - 6 hours of lecture and 2 hours of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructors: Perloff, Wagner
Intermediate Microeconomics with Applications to Sustainability: Read Less [-]
**ENVECON C101 Environmental Economics 4 Units**
Terms offered: Spring 2022, Spring 2021, Spring 2020
Environmental Economics: Read More [+]

**Rules & Requirements**
Prerequisites: 100, Mathematics 16A-16B, or Economics 100A or 101A

**Hours & Format**
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week
Summer: 8 weeks - 6 hours of lecture and 2 hours of discussion per week

**Additional Details**
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Zilberman
Also listed as: ECON C125
Environmental Economics: Read Less [-]

**ENVECON C102 Natural Resource Economics 4 Units**
Terms offered: Fall 2021, Fall 2020, Fall 2019
Introduction to the economics of natural resources. Land and the concept of economic rent. Models of optimal depletion of nonrenewable resources and optimal use of renewable resources. Application to energy, forests, fisheries, water, and climate change. Resources, growth, and sustainability.
Natural Resource Economics: Read More [+]

**Rules & Requirements**
Prerequisites: 100, or Economics 100A or 100B

**Hours & Format**
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Additional Details**
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Ligon
Natural Resource Economics: Read Less [-]

**ENVECON 103 Intermediate Microeconomic Theory with Application to Natural Resources 4 Units**
Terms offered: Prior to 2007
Covers intermediate microeconomic theory for further study of economic behavior as it relates to agriculture and natural resource problems. Theory of consumption, production, theory of the firm, industrial organization, general equilibrium, public goods and externalities. Applications to agriculture and natural resources.
Intermediate Microeconomic Theory with Application to Natural Resources: Read More [+]

**Rules & Requirements**
Prerequisites: C1 or Economics 1 or C3 and Mathematics 16A or consent of instructor
Credit Restrictions: Students will receive no credit for Environmental Economics 103 after completing Environmental Economics 100, Economics 100A, Economics 101A, or Undergraduate Business Administration 110.

**Hours & Format**
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Additional Details**
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Ligon
Intermediate Microeconomic Theory with Application to Natural Resources: Read Less [-]
ENVECON 104 The Economics of Sustainable Business and Policy 3 Units
Terms offered: Not yet offered
This course examines how private businesses operate in the context created by environmental regulation. It provides an overview of grand environmental challenges, including climate, air pollution, and water quality and scarcity. For each problem, the potential for value creation by private businesses that can help society solve these problems is explained, so that environmental problems can be understood as market opportunities. It provides a series of case studies that examine how the strategic decisions of businesses are shaped by environmental policy, and how businesses act to shape policy to their benefit.
The Economics of Sustainable Business and Policy: Read More [+]

Rules & Requirements

Prerequisites: ENVECON 100, ECON 101 A & B, or the equivalent

Hours & Format

Summer: 6 weeks - 6 hours of lecture and 1.5 hours of discussion per week

Additional Details

Subject/Course Level: Environmental Economics and Policy/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

The Economics of Sustainable Business and Policy: Read Less [-]

ENVECON 105 Data Tools for Sustainability and the Environment 3 Units
Terms offered: Not yet offered
This course introduces students to data analysis for use in addressing sustainable business and policy questions. By the end of this course, students will be able to analyze real-world data within the Jupyter/Python programming environment. It will focus on real-world applications such as the White House’s environmental justice proposals; emissions monitoring; and assessing plastic waste for the Government of Indonesia.

Data Tools for Sustainability and the Environment: Read More [+]

Hours & Format

Summer: 6 weeks - 6 hours of lecture and 1.5 hours of discussion per week

Additional Details

Subject/Course Level: Environmental Economics and Policy/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Data Tools for Sustainability and the Environment: Read Less [-]

ENVECON C115 Modeling and Management of Biological Resources 4 Units
Terms offered: Fall 2018, Fall 2017, Fall 2015, Fall 2014

Modeling and Management of Biological Resources: Read More [+]

Rules & Requirements

Prerequisites: A course that includes differential and integral calculus

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week
Summer: 6 weeks - 6.5 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Environmental Economics and Policy/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Getz

Also listed as: ESPM C104

Modeling and Management of Biological Resources: Read Less [-]
ENVECON C118 Introductory Applied Econometrics 4 Units
Terms offered: Spring 2022, Fall 2021, Summer 2021 8 Week Session
Formulation of a research hypothesis and definition of an empirical strategy. Regression analysis with cross-sectional and time-series data; econometric methods for the analysis of qualitative information; hypothesis testing. The techniques of statistical and econometric analysis are developed through applications to a set of case studies and real data in the fields of environmental, resource, and international development economics. Students learn the use of a statistical software for economic data analysis.

Introductory Applied Econometrics: Read More [+]

Rules & Requirements

Prerequisites: Statistics 2, 20, 21, or equivalent

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Summer: 8 weeks - 6 hours of lecture and 2 hours of discussion per week

Additional Details

Subject/Course Level: Environmental Economics and Policy/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Sadoulet

Also listed as: IAS C118

Introductory Applied Econometrics: Read Less [-]

ENVECON 131 Globalization and the Natural Environment 3 Units
Terms offered: Fall 2013, Fall 2012, Fall 2011
An examination of the environmental effects of globalization. How has increased international trade, the integration of factor markets, and the adoption of international agreements affected the environment? Case studies include the environmental impact of GATT/WTO and NAFTA. Multi-disciplinary approach examines the actual laws and institutions and the economic theories of globalization, in addition to the empirical evidence of globalization's environmental effects.

Globalization and the Natural Environment: Read More [+]

Rules & Requirements

Prerequisites: Intermediate micro-economic theory or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Environmental Economics and Policy/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Karp

Globalization and the Natural Environment: Read Less [-]
ENVECON C132 International Environmental Economics 4 Units
Terms offered: Fall 2021, Fall 2020
This course studies the following question: How should policymakers and scholars design and analyze environmental policy in a globalized world where much economic activity and pollution crosses political borders? The course addresses issues including climate change, air and water pollution, deforestation, species extinction, and others. The course also analyzes a variety of ways that countries and regions interact, including trade, foreign direct investment, outsourcing, international agreements and treaties, and others. The course also teaches a range of tools used to analyze these issues, including life-cycle (also called environmental footprint) analysis, simple econometrics, environmental market design, non-market valuation, and the data.

Objectives & Outcomes

Course Objectives:
1. Develop a strong grasp of the main debates and ideas involving international environmental economics
2. Learn to interpret, apply, and critically assess methods used to study international environmental economic issues
3. Build skills in reading basic economic writing involving these issues, including an understanding of their evidence and conclusions, and ability to critically evaluate the basis for these conclusion

Student Learning Outcomes:
1. A strong grasp of the main scholarly debates and ideas involving international environmental economics
2. The ability to interpret and critically assess methods used to study international environmental economic issues, including: life-cycle analysis and input-output tables; simple econometric estimates; the design of environmental policy; non-market valuation; and the use of remote sensing (satellite) data

The ability to read basic empirical environmental economics papers, understand their evidence and conclusions, and critically evaluate the basis for these conclusions

Rules & Requirements

Prerequisites: ENVECON 100, ECON 101a, ECON 100a or equivalent

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Shapiro

ENVECON 140AC Economics of Race, Agriculture, and the Environment 3 Units
Terms offered: Fall 2012, Fall 2011, Fall 2010
This course examines whether and how economic processes explain shifting formations of race and differential experiences among racial groups in U.S. agricultural and environmental systems. It approaches economic processes as organizing dynamics of racial differentiation and integration, and uses comparative experience among different racial and ethnic groups as sources of evidence against which economic theories of differentiation and integration can be tested.

Objectives & Outcomes

Course Objectives:
1. Develop a strong grasp of the main debates and ideas involving international environmental economics
2. Learn to interpret, apply, and critically assess methods used to study international environmental economic issues
3. Build skills in reading basic economic writing involving these issues, including an understanding of their evidence and conclusions, and ability to critically evaluate the basis for these conclusion

Student Learning Outcomes:
1. A strong grasp of the main scholarly debates and ideas involving international environmental economics
2. The ability to interpret and critically assess methods used to study international environmental economic issues, including: life-cycle analysis and input-output tables; simple econometric estimates; the design of environmental policy; non-market valuation; and the use of remote sensing (satellite) data

The ability to read basic empirical environmental economics papers, understand their evidence and conclusions, and critically evaluate the basis for these conclusions

Rules & Requirements

Prerequisites: 1, or one lower division course in a social science, or consent of instructor

Requirements this course satisfies: Satisfies the American Cultures requirement

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Romm

Also listed as: ECON C184
ENVECON 141 Agricultural and Environmental Policy 4 Units
Terms offered: Spring 2022, Spring 2021, Fall 2019
This course considers the formation, implementation, and impact of public policies affecting agriculture and the environment. Economic approaches to public lawmaking, including theories of legislation, interest group activity, and congressional control of bureaucracies. Case studies include water allocation, endangered species protection, water quality, food safety, drainage, wetlands, pesticides, and farmworker safety. Emphasis on examples from California.
Agricultural and Environmental Policy: Read More [+]

Rules & Requirements
Prerequisites: 100 or Economics 100A or 101A

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week
Summer: 8 weeks - 6 hours of lecture and 2 hours of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

Agricultural and Environmental Policy: Read Less [-]

ENVECON 142 Industrial Organization with Applications to Agriculture and Natural Resources 4 Units
Terms offered: Spring 2015, Spring 2014, Spring 2013
Organization and performance of agricultural and resource markets. Conduct of firms within those markets, such as price competition, product differentiation, predatory pricing, vertical integration, dealer networks and advertising. The role of public policy in the markets. Case studies include oil cartel OPEC, agricultural cooperatives, vertical integration of food processors and franchising of fast-food chains. Discussion sections cover empirical applications of theory presented during lectures for current environmental and agricultural policies.

Industrial Organization with Applications to Agriculture and Natural Resources: Read More [+]

Rules & Requirements
Prerequisites: Environmental Economics and Policy 100 or Economics 100A or 101A

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

Instructor: Villas-Boas

Industrial Organization with Applications to Agriculture and Natural Resources: Read Less [-]
ENVECON 143 Economics of Innovation and Intellectual Property 4 Units
Terms offered: Spring 2022, Fall 2021, Fall 2020
This course addresses the economics of research and incentives for innovation including intellectual property rights. Topics include the standard modern economics of invention; modern intellectual property rights; innovation examples from agriculture, energy, pharmaceuticals, software, and electronics; the roles of the public and private sectors; innovation and market structure; the needs of the poor; and global intellectual property negotiations.
Economics of Innovation and Intellectual Property: Read More [+]
Rules & Requirements
Prerequisites: ENVECON 100 or ECON 100A or ECON 101A with minimum grade of C+

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Wright

ENVECON 145 Health and Environmental Economic Policy 4 Units
Terms offered: Fall 2021, Fall 2019, Fall 2016
This course introduces students to key issues and findings in the field of health and environmental economics. The first half of the course focuses on the theoretical and statistical frameworks used to analyze instances of market failure in the provision of health and environmental goods. The second half focuses on policy-relevant empirical findings in the field.
Health and Environmental Economic Policy: Read More [+]
Rules & Requirements
Prerequisites: Intermediate microeconomics, 100, Economics 100 or 101A, and some statistics

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Anderson

ENVECON 147 Regulation of Energy and the Environment 4 Units
Terms offered: Spring 2022, Spring 2021, Spring 2020
This is an applied economics course on government regulation of energy with an emphasis on policies that seek to mitigate the impact of energy production and consumption on the environment. The course is designed to help students make connections between economic concepts and real world regulatory policy questions and issues.
Regulation of Energy and the Environment: Read More [+]
Rules & Requirements
Prerequisites: Intermediate microeconomic theory and calculus

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Fowlie

ENVECON C151 Development Economics 4 Units
Terms offered: Spring 2022, Fall 2021, Summer 2021 8 Week Session, Spring 2021
This course covers theory and empirical evidence on the determinants of economic development and the global fight against poverty. The course aims to introduce students to modern empirical research methods that are being used to inform policy making in developing countries. Students also learn how to implement these tools themselves using real-world data sets and widely used statistical software for impact evaluation.
Development Economics: Read More [+]
Rules & Requirements
Prerequisites: EnvEcon 100 or Econ 100A or 101A; Econ 140 or 141 or EnvEcon/IAS C118

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week
Summer:
6 weeks - 8 hours of lecture and 2 hours of discussion per week
8 weeks - 6 hours of lecture and 2 hours of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Also listed as: ECON C171
Development Economics: Read Less [-]
ENVECON N151 Economic Development 4 Units
Terms offered: Prior to 2007
Problems of underdevelopment and poverty, policy issues, and development strategy.
Economic Development: Read More [+]
Rules & Requirements
Prerequisites: Envecon 100, Economics 100A or Economics 100B
Credit Restrictions: Students will receive no credit for ENVECON N151 after completing ECON N171, ENVECON C151, or ECON C171. A deficient grade in ENVECON N151 may be removed by taking ECON N171, ENVECON C151, or ECON C171.

Hours & Format
Summer:
6 weeks - 8 hours of lecture and 2 hours of discussion per week
8 weeks - 6 hours of lecture and 2 hours of discussion per week
Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Economic Development: Read Less [-]

ENVECON 152 Advanced Topics in Development and International Trade 3 Units
Terms offered: Spring 2020, Spring 2018, Fall 2016
This course discusses recent efforts to understand behavior and institutions in village economies, with particular attention paid to the importance of risk. Economic analysis of savings, consumption, insurance, production, trade, welfare distribution and institutions of villages in developing countries. Roughly equal parts of theory, evidence, and policy.
Advanced Topics in Development and International Trade: Read More [+]
Rules & Requirements
Prerequisites: 100 or Economics 100A

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week
Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Magruder
Advanced Topics in Development and International Trade: Read Less [-]

ENVECON 153 Population, Environment, and Development 3 Units
Terms offered: Spring 2022, Spring 2021, Spring 2020
This course takes a quantitative, hands-on approach to understanding the challenges of feeding the human population of the planet Earth. We'll discuss topics of nutrition, subsistence food consumption, and consumer demand for food to develop our understanding of the current situation. We'll then develop both theories and computer models of population dynamics taking into account people's decisions about childbearing, changes in mortality, and changes in food supply in order to learn something about the future of food. Focus throughout the course will be on developing practical tools to work with real-world data.
Population, Environment, and Development: Read More [+]
Rules & Requirements
Prerequisites: ENVECON 100 or ECON 100A or ECON 101A, and STAT C8 or INFO C8 or COMPSCI C8, and MATH 54 RECOMMENDED

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 2 hours of laboratory per week
Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Population, Environment, and Development: Read Less [-]

ENVECON 154 Economics of Poverty and Technology 3 Units
Terms offered: Spring 2014, Spring 2013, Spring 2012
Introduction to the economic framework underlying the use of technology to address rural poverty in developing countries. Analyzes the path of technology development from innovation and design to the adoption and use of technology in rural economies. Focuses on technologies related to agricultural production, processing, market access, value chains, and climate change.
Economics of Poverty and Technology: Read More [+]
Rules & Requirements
Prerequisites: Intermediate microeconomics

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture per week
Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Boettiger
Economics of Poverty and Technology: Read Less [-]
ENVECON 161 Advanced Topics in Environmental and Resource Economics 4 Units
Terms offered: Fall 2013, Fall 2012, Fall 2011
The roots of environmental and resource economics. Theories of land and resource rent. Models of optimal use of renewable and nonrenewable resources with applications to energy and timber. Balancing environmental and extractive values. Resources, growth, and sustainability. Special topic: the problem of global climate change. Advanced Topics in Environmental and Resource Economics: Read More [+]

Rules & Requirements
Prerequisites: 100 or Economics 100A or Economics 101A; 101 recommended

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

ENVECON 162 Economics of Water Resources 3 Units
Terms offered: Spring 2022, Spring 2021, Spring 2020
Urban demand for water; water supply and economic growth; water utility economics; irrigation demand; large water projects; economic impacts of surface water law and institutions; economics of salinity and drainage; economics of groundwater management. Economics of Water Resources: Read More [+]

Rules & Requirements
Prerequisites: 100 or Economics 100A or 101A; 101 recommended

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

ENVECON 170 Energy and Climate Policy in China 1 Unit
Terms offered: Spring 2022, Spring 2021
The course will present scholarly review of historical and on-going energy and climate policy topics in China, with a broad goal of gaining understanding the relationship between energy, economic development, and climate change in the largest emerging economy, China. Energy and Climate Policy in China: Read More [+]

Objectives & Outcomes
Course Objectives: One goal of the course is to give students the tools to read, write about, speak about, and in general critically evaluate empirical research on energy and climate policy in China and in developing economies in general. The lectures and interactions with guest speakers would give student the perspective on the effectiveness of various energy and climate policies in the developing world context, an understanding of the key factors in successful climate policies, so they could apply these lessons learned to develop appropriate energy and climate policies in other developing economies.

Hours & Format
Fall and/or spring: 15 weeks - 1 hour of seminar per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Alternative to final exam.
Instructor: Lin

Energy and Climate Policy in China: Read Less [-]
**ENVECON C175 The Economics of Climate Change 4 Units**

Terms offered: Spring 2016, Fall 2015, Fall 2014, Fall 2013

The course will start with a brief introduction and evaluation of the scientific aspects behind climate change. Economic models will be developed to analyze the impacts of climate change and provide and critique existing and proposed policy tools. Specific topics studied are impacts on water resources and agriculture, economic evaluation of impacts, optimal control of greenhouse gases, benefit cost analysis, international treaty formation, discounting, uncertainty, irreversibility, and extreme events.

The Economics of Climate Change: Read More [+]

**Rules & Requirements**

**Prerequisites:** 106, 107, Economics 1, or equivalent

**Hours & Format**

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Summer: 6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week

**Additional Details**

**Subject/Course Level:** Environmental Economics and Policy/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Aufhammer, Fisher

**Also listed as:** IAS C175

The Economics of Climate Change: Read Less [-]

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**ENVECON C176 Climate Change Economics 4 Units**

Terms offered: Fall 2021, Summer 2021 8 Week Session, Fall 2020

This course is a self-contained introduction to the economics of climate change. Climate change is caused by a large variety of economic activities, and many of its impacts will have economic consequences. Economists have studied climate change for more than two decades, and economic arguments are often powerful in policy decisions. The course will familiarize students with these arguments and equip them with the tools to participate in discussions of climate change policy through an economic lens.

Climate Change Economics: Read More [+]

**Objectives & Outcomes**

**Course Objectives:** The course will start with a brief review of the science of climate change, discuss scenarios of economic growth and the greenhouse gas emissions caused by economic activities and investigate various emission reduction opportunities and their economic costs. A significant amount of time will be spent on studying the impacts of climate change, their economic evaluation and how adaptation can lower the costs of climate damages.

We will then study various theoretical frameworks economists have developed that answer the question how estimates about the costs and benefits of climate policy can be combined to find “good” climate policies. We then study three more specialized topics that turn out to be of great importance when analyzing climate change policy: first, how do we compare costs and benefits of generations that live many centuries apart? Second, how do we design climate policy when our projections of both the costs and the benefits of climate policy are highly uncertain? And third, how can equity considerations be accounted for in an economic assessment of climate change policy? The course will close with a look at international cooperation on climate policy and why it has been so difficult to agree on effective treaties that implement climate change policy.

**Student Learning Outcomes:** Students will also have gained insight into the practical aspects of modeling the economics of climate change by building a simple integrated assessment model in Excel. They will be able to use that model to do simple analysis of climate change policy themselves.

Students will be familiar with the tools economists use to analyze climate change policy. They will have studied empirical estimates of the costs and benefits of climate policy and have an understanding of the analytical issues that drive research on the economics of climate change.

**Hours & Format**

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 8 weeks - 6 hours of lecture and 4 hours of laboratory per week

**Additional Details**

**Subject/Course Level:** Environmental Economics and Policy/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Anthoff

**Also listed as:** ENE,RES C176/IAS C176

Climate Change Economics: Read Less [-]
ENVECON C181 International Trade 4 Units
Terms offered: Fall 2021, Spring 2021, Fall 2020
The theory of international trade and its applications to tariff protection.
This course is equivalent to UGBA 118; students will not receive credit for both courses.
International Trade: Read More [+]

Rules & Requirements
Prerequisites: Economics100A-100B or Economics 101A-101B
Credit Restrictions: Students will receive no credit for ECON C181/ENVECON C181 after passing ECON 181, ECON N181 or UGBA 118. A deficient grade in ECON 181, or ECON N181 may be removed by taking ECON C181/ENVECON C181.

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week
Summer: 8 weeks - 6 hours of lecture and 2 hours of discussion per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.

ENVECON C183 Forest Ecosystem Management 4 Units
Terms offered: Spring 2016, Spring 2015, Spring 2014
Introduces students to concepts and quantitative tools needed for the sustainable management of multi-use forest ecosystems. Topics covered include: estimation of ecological, economic, and social values: construction of dynamic forest models, methods for optimal decision-making, and development of forest management plans. Application to current issues in temperate and tropical forest management are discussed. Quantitative, analytical, and communication skills are emphasized. Oral presentation required.
Forest Ecosystem Management: Read More [+]

Hours & Format
Fall and/or spring: 15 weeks - 3 hours of lecture and 3 hours of laboratory per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam required.
Instructor: Potts
Also listed as: ESPM C183
Forest Ecosystem Management: Read Less [-]

ENVECON 185 The Production and Business of Beer, Wine, and Spirits 2 Units
Terms offered: Fall 2021, Fall 2020
Raw materials, process flow, production methodology and quality control will be introduced in the first half of the class for the first half of the semester. Students will also be introduced to basic chemistry and microbiology of fermentation and distilling. The second half of the semester will be an introduction to finance, cost accounting, sales and marketing for the alcoholic beverage industry. The goal will be to enable the students to write a business plan by the end of the semester.
The Production and Business of Beer, Wine, and Spirits: Read More [+]

Objectives & Outcomes
Course Objectives: 1. Cite detail of raw materials and production processes for beer, wine and spirits.
2. Describe and differentiate the majority of beer styles, wine varietals and various distilled spirits.
3. Write a realistic business plan for a beverage production company.

Hours & Format
Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Alternative to final exam.
Instructor: Perloff
The Production and Business of Beer, Wine, and Spirits: Read Less [-]

ENVECON 195 Senior Thesis 4 Units
Terms offered: Summer 2019, Fall 2017, Fall 2016
Writing of a thesis under the direction of member(s) of the faculty. Subject must be approved by faculty sponsor.
Senior Thesis: Read More [+]

Rules & Requirements
Prerequisites: Senior standing in Environmental Economics and Policy and consent of instructor
Repeat rules: Course may be repeated for credit without restriction.

Hours & Format
Fall and/or spring: 15 weeks - 0 hours of independent study per week
Summer:
6 weeks - 0 hours of independent study per week
8 weeks - 0 hours of independent study per week

Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam not required.
Senior Thesis: Read Less [-]
ENVECON 196 Senior Research Seminar 4 Units
Terms offered: Spring 2011
This course is intended as a capstone experience for undergraduates in the major coordinated by one faculty member with participation by others. Following presentations by faculty on researchable topics in their areas of expertise, students will develop ideas for a research paper and discuss in subsequent seminar sessions. Approximately the last five weeks of the semester will be devoted to student presentations of papers either already completed or in progress, and discussion by seminar participants and faculty.
Senior Research Seminar: Read More [+]
Rules & Requirements
Prerequisites: Student must be a senior with at least a 3.6 GPA in the Environmental Economics and Policy major
Hours & Format
Fall and/or spring: 15 weeks - 2 hours of seminar per week
Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam not required.
Instructor: Fisher
Senior Research Seminar: Read Less [-]

ENVECON H196 Honors Research 4 Units
Terms offered: Fall 2016, Spring 2016, Fall 2015
Supervised independent honors research specific to aspects of environmental economics and policy, followed by a oral presentation and a written report.
Honors Research: Read More [+]
Rules & Requirements
Prerequisites: Upper division standing. Eligibility restrictions related to GPA and unit accumulation. Open only to Environmental Economics and Policy majors in the College of Natural Resources
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 4 hours of independent study per week
Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Letter grade. Final exam not required.
Honors Research: Read Less [-]

ENVECON 197 Field Study in Environmental Economics and Policy 1 - 4 Units
Terms offered: Fall 2016, Summer 2016 10 Week Session, Spring 2016
Supervised experience in off-campus organizations relevant to specific aspects of environmental economics and policy. Regular individual meetings with faculty sponsor and written reports required.
Field Study in Environmental Economics and Policy: Read More [+]
Rules & Requirements
Prerequisites: Consent of instructor
Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 1-4 hours of independent study per week
Summer:
6 weeks - 1-9 hours of independent study per week
8 weeks - 1-7 hours of independent study per week
Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.
Field Study in Environmental Economics and Policy: Read Less [-]

ENVECON 198 Directed Group Studies for Advanced Undergraduates 1 - 3 Units
Terms offered: Spring 2016, Fall 2015, Spring 2015
Group study of selected topic or topics in Environmental Economics and Policy.
Directed Group Studies for Advanced Undergraduates: Read More [+]
Rules & Requirements
Prerequisites: Consent of instructor
Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.
Repeat rules: Course may be repeated for credit without restriction.
Hours & Format
Fall and/or spring: 15 weeks - 1-3 hours of directed group study per week
Summer: 8 weeks - 1.5-5.5 hours of directed group study per week
Additional Details
Subject/Course Level: Environmental Economics and Policy/Undergraduate
Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.
Directed Group Studies for Advanced Undergraduates: Read Less [-]
ENVECON 199 Supervised Independent Study and Research 1 - 4 Units
Terms offered: Fall 2021, Spring 2021, Spring 2020
Enrollment restrictions apply. Open to qualified upper division students wishing to pursue special study and directed research under the direction of a member of the staff.

Rules & Requirements

Prerequisites: Upper division standing and consent of instructor

Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

Repeat rules: Course may be repeated for credit without restriction.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week
Summer: 8 weeks - 1-4 hours of independent study per week

Additional Details

Subject/Course Level: Environmental Economics and Policy/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

Supervised Independent Study and Research: Read Less [-]