

# Forestry

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The Master of Forestry (MF) degree is the advanced professional forestry degree granted by the Department of Environmental Science, Policy, and Management. The student who has completed an undergraduate curriculum in forestry is usually broadly trained in the principles of forestry but has not yet developed proficiency in the application of these principles to diverse problems involved in professional practice. The Master of Forestry program is designed to advance the student's understanding of the essentials of professional forest management at the graduate level within the context of resource and environmental planning of sustainable systems.

## Admission to the University

### Minimum Requirements for Admission

The following minimum requirements apply to all graduate programs and will be verified by the Graduate Division:

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A grade point average of B or better (3.0);
3. If the applicant comes from a country or political entity (e.g., Quebec) where English is not the official language, adequate proficiency in English to do graduate work, as evidenced by a TOEFL score of at least 90 on the iBT test, 570 on the paper-and-pencil test, or an IELTS Band score of at least 7 (note that individual programs may set higher levels for any of these); and
4. Sufficient undergraduate training to do graduate work in the given field.

### Applicants Who Already Hold a Graduate Degree

The Graduate Council views academic degrees not as vocational training certificates, but as evidence of broad training in research methods, independent study, and articulation of learning. Therefore, applicants who already have academic graduate degrees should be able to pursue new subject matter at an advanced level without need to enroll in a related or similar graduate program.

Programs may consider students for an additional academic master's or professional master's degree only if the additional degree is in a distinctly different field.

Applicants admitted to a doctoral program that requires a master's degree to be earned at Berkeley as a prerequisite (even though the applicant already has a master's degree from another institution in the same or a closely allied field of study) will be permitted to undertake the second master's degree, despite the overlap in field.

The Graduate Division will admit students for a second doctoral degree only if they meet the following guidelines:

1. Applicants with doctoral degrees may be admitted for an additional doctoral degree only if that degree program is in a general area of knowledge distinctly different from the field in which they earned their original degree. For example, a physics PhD could be admitted to a doctoral degree program in music or history; however, a student with a doctoral degree in mathematics would not be permitted to add a PhD in statistics.

2. Applicants who hold the PhD degree may be admitted to a professional doctorate or professional master's degree program if there is no duplication of training involved.

Applicants may apply only to one single degree program or one concurrent degree program per admission cycle.

## Required Documents for Applications

1. **Transcripts:** Applicants may upload *unofficial* transcripts with your application for the departmental initial review. *If the applicant is admitted*, then *official* transcripts of all college-level work will be required. Official transcripts must be in sealed envelopes as issued by the school(s) attended. If you have attended Berkeley, upload your unofficial transcript with your application for the departmental initial review. *If you are admitted*, an official transcript with evidence of degree conferral *will not* be required.
2. **Letters of recommendation:** Applicants may request online letters of recommendation through the online application system. Hard copies of recommendation letters must be sent directly to the program, not the Graduate Division.
3. **Evidence of English language proficiency:** All applicants from countries or political entities in which the official language is not English are required to submit official evidence of English language proficiency. This applies to applicants from Bangladesh, Burma, Nepal, India, Pakistan, Latin America, the Middle East, the People's Republic of China, Taiwan, Japan, Korea, Southeast Asia, most European countries, and Quebec (Canada). However, applicants who, at the time of application, have already completed at least one year of full-time academic course work with grades of B or better at a US university may submit an official transcript from the US university to fulfill this requirement. The following courses will not fulfill this requirement:
  - courses in English as a Second Language,
  - courses conducted in a language other than English,
  - courses that will be completed after the application is submitted, and
  - courses of a non-academic nature.

If applicants have previously been denied admission to Berkeley on the basis of their English language proficiency, they must submit new test scores that meet the current minimum from one of the standardized tests.

## Where to Apply

Visit the Berkeley Graduate Division application page (<http://grad.berkeley.edu/admissions/apply>).

## Curriculum

The MF program has four components: course work, an internship, a professional paper, and an oral examination, and typically takes about two years for completion.

### Course work

Twenty-four semester units of upper division and graduate courses, of which at least 12 units are at the graduate level. The Forestry graduate adviser and the student's guiding professor must approve the program of study to assure advanced specialized training in professional forest resource management. Advanced courses in forest measurements, silviculture, and management are required.

### Internship

Normally with a public or private forestland management organization, the internship provides direct experience in the application of theory to professional land management.

### **Professional paper**

The paper demonstrates a student's ability to assemble and analyze data and to recommend a resolution of an applied forest problem. The paper may be based on the internship or on another supervised professional work experience, or may be a report based on independent analysis. The paper must have guiding professor and forestry graduate adviser acceptance and approval.

### **Oral Exam**

A comprehensive oral examination covering forest management is taken after completion of course work and approval of the professional paper. Primary emphasis will be on work done in the period of residence, but students should also be prepared to demonstrate mastery of the general field of forestry.

For more information on the Master of Forestry degree, please contact Roxanne Heglar ([http://ourenvironment.berkeley.edu/people\\_profiles/roxanne-heglar](http://ourenvironment.berkeley.edu/people_profiles/roxanne-heglar)), the forestry graduate adviser.

## **Forestry**

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

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Spring 2018, Fall 2017

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

Introduction to Environmental Economics and Policy: Read More [+]

#### **Rules & Requirements**

**Prerequisites:** Mathematics 32

**Credit Restrictions:** Students will receive no credit after taking Economics 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**

Offered through: Agricultural and Resource Economics

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.

Freshman/Sophomore Seminar: Read More [+]

#### **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**

Offered through: Agricultural and Resource Economics

Terms offered: Spring 2001

Group study (or seminar) of a selected topic or topics in Environmental Economics and Policy.

Directed Group Studies (for Lower Division Students): 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

#### **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 Microeconomic Theory with Application to Natural Resources 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Spring 2018, Fall 2017

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.

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 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

### Additional Details

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

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

**Instructor:** Ligon and Rausser

Microeconomic Theory with Application to Natural Resources: Read Less [-]

## ENVECON C101 Environmental Economics 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Summer 2018 8 Week Session, Spring 2018, Summer 2017 8 Week Session, Spring 2017, Summer 2016

Theories of externalities and public goods applied to pollution and environmental policy. Trade-off between production and environmental amenities. Assessing nonmarket value of environmental amenities. Remediation and clean-up policies. Environment and development. Biodiversity management.

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

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Fall 2017, Fall 2016

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:** Sunding

Natural Resource Economics: Read Less [-]

## ENVECON 103 Intermediate Microeconomic Theory with Application to Natural Resources 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Not yet offered

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 C115 Modeling and Management of Biological Resources 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Fall 2017, Fall 2015

Models of population growth, chaos, life tables, and Leslie matrix theory.

Harvesting and exploitation theory. Methods for analyzing population

interactions, predation, competition. Fisheries, forest stands, and

insect pest management. Genetic aspects of population management.

Mathematical theory based on simple difference and ordinary differential

equations. Use of simulation packages on microcomputers (previous

experience with computers not required).

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

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Summer 2018 8 Week Session, Spring 2018

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 [\[+\]](#)

### 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

Offered through: Agricultural and Resource Economics

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 140AC Economics of Race, Agriculture, and the Environment 3 Units

Offered through: Agricultural and Resource Economics

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.

Economics of Race, Agriculture, and the Environment: Read More [\[+\]](#)

### 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

Economics of Race, Agriculture, and the Environment: Read Less [\[-\]](#)

## ENVECON 141 Agricultural and Environmental Policy 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Summer 2018 8 Week Session, Fall 2017

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

Offered through: Agricultural and Resource Economics

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

Offered through: Agricultural and Resource Economics

Terms offered: Spring 2018, Spring 2017, Spring 2016

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

Economics of Innovation and Intellectual Property: Read Less [\[-\]](#)

## ENVECON 145 Health and Environmental Economic Policy 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2016, Fall 2015, Fall 2014

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

Health and Environmental Economic Policy: Read Less [\[-\]](#)

## ENVECON 147 Regulation of Energy and the Environment 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Spring 2017, Spring 2016, Spring 2015

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

Regulation of Energy and the Environment: Read Less [\[-\]](#)

## ENVECON C151 Economic Development 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Fall 2017, Spring 2017

Problems of underdevelopment and poverty, policy issues, and development strategy.

Economic Development: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** 100, Economics 100A or 101A

### 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.

**Instructor:** de Janvry

**Also listed as:** ECON C171

Economic Development: Read Less [\[-\]](#)

## ENVECON 152 Advanced Topics in Development and International Trade 3 Units

Offered through: Agricultural and Resource Economics

Terms offered: Spring 2018, Fall 2016, Fall 2015

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

Offered through: Agricultural and Resource Economics

Terms offered: Spring 2014, Fall 2013, Spring 2013

This course takes an interdisciplinary approach to the complex interactions between population, environmental change, and economic development, including the leading theories for understanding these interactions. The origins and history of current debates are discussed as well as some of the major issues stemming from these debates, such as immigration, international trade, family planning policies and concerns over the global commons. Specific natural resources and services like fresh water, food supply, and forest cover are analyzed as case studies. Policy options for sustainable development are discussed.

Population, Environment, and Development: Read More [\[+\]](#)

### Rules & Requirements

**Prerequisites:** Intermediate microeconomic theory or consent of instructor

### 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.

Population, Environment, and Development: Read Less [\[-\]](#)

## ENVECON 154 Economics of Poverty and Technology 3 Units

Offered through: Agricultural and Resource Economics

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

Offered through: Agricultural and Resource Economics

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.

Advanced Topics in Environmental and Resource Economics: Read Less [\[-\]](#)



## ENVECON 162 Economics of Water Resources 3 Units

Offered through: Agricultural and Resource Economics

Terms offered: Spring 2018, Spring 2017, Spring 2016

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.

Economics of Water Resources: [Read Less](#) [-]

## ENVECON C175 The Economics of Climate Change 4 Units

Offered through: Agricultural and Resource Economics

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](#) [-]

## ENVECON C176 Climate Change Economics 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Fall 2017, Fall 2016

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

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2018, Spring 2018, Fall 2017

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 [a]

### Rules & Requirements

**Prerequisites:** Economics100A-100B or Economics 101A-101B

**Credit Restrictions:** Students will receive no credit for Economics C181/ Environmental Economics C181 after completing Economics 181 or N181. A deficient grade in Economics 181, or N181 may be removed by taking Economics C181/Environment Economics and Policy C181.<BR/>

### 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.

International Trade: Read Less [-]

## ENVECON C183 Forest Ecosystem Management 4 Units

Offered through: Agricultural and Resource Economics

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 [a]

### 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 195 Senior Thesis 4 Units

Offered through: Agricultural and Resource Economics

Terms offered: Fall 2017, Fall 2016, Spring 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 [a]

### 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

Offered through: Agricultural and Resource Economics

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 [a]

### 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

Offered through: Agricultural and Resource Economics

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 - 3 Units

Offered through: Agricultural and Resource Economics

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 - 0 hours of independent study per week

**Summer:** 8 weeks - 1-3 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

Offered through: Agricultural and Resource Economics

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

Offered through: Agricultural and Resource Economics

Terms offered: Spring 2018, Fall 2017, Fall 2016

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.

Supervised Independent Study and Research: [Read More](#) [+]

### 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](#) [-]