

## ECON 1179, Fall 2012

### Economic Growth and the Environment

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**Course objectives.** ECON 1179 introduces students to some of the fundamental principles of microeconomics and macroeconomics. There are two objectives: to learn simple tools, ideas, and models from economic theory and to apply these tools to the analysis of the interactions between economic growth and the environment.

**Course description.** This course surveys some of the fundamental principles of macroeconomics and microeconomics such as the supply and demand framework, trade theory, national income accounting, some basic models of economic growth, externality theory, the theory of the firm, the theory of consumer choice, and others. These topics are introduced gradually along the analysis of the interactions between economic growth and the environment.

The course is organized into two parts, with some flexibility. In the first part, students first survey past and present differences in economic status and in the rate of income growth among countries, and then learn to use some fundamental tools of economics (the supply and demand framework and trade theory) to formulate clear hypothesis concerning the expected impact of geographic variables (climate, geography, natural resources) on economic success. Discussing the potential impact of natural disasters on economies, students learn basic ideas of economic growth theory and to the distinction between various types of capital. Next, adopting a historical perspective also sheds light on current differences in wealth and well-being between economies, but through more complex mechanisms by which nature and the environment may have affected the birth, development, and sometimes collapse of past societies.

The second part of the course recognizes that growing economies have transformed their environment in various ways. In this part students learn simple versions of several basic economic growth models (the Malthusian model, the Classical growth model, the modern growth model) and examine how economies have interacted with their environment at different stages of development. Next, students examine how tools from economics (including the theory of the firm, consumer choice, and the theory of externalities) can help to better understand the causes, consequences, and potential solution to some of the current environmental problems. The course ends with the examination of the concept of sustainable development.

**Readings.** The required textbook is “Economic Growth and the Environment: ECON 1179” and is available at the Uconn bookstore. In addition, you are asked to read a number of papers, all available on the HuskyCT website for this course. The papers are:

(Arrow95) Arrow, K. & al. (1995) *Economic Growth, Carrying Capacity, and the Environment*, Science 268: 520-521.

(Brunn-Bulte08) Brunnswweiler, C.N. and E.H. Bulte (2008) *Linking Natural Resources to Slow Growth and More Conflict*, Science 320: 616-617.

(Cohen03) Cohen, Joel E. (2003) *Human Population: The Next Half Century*, Science 301: 1172-1175

(Costanza97) Costanza, R. & al. (1997) *The Value of the Worlds Ecosystems Services and Natural Capital*, Nature 387: 253-261.

(Diamond02) Diamond, Jared (2002) *Evolution, Consequences and Future of Plant and Animal Domestication*, Nature 418: 700-708.

(Diamond97) Diamond, Jared (1997) *Location, Location, Location: The First Farmers*, Science 278: 1243-1244.

(Hardin68) Hardin, G. (1968) *The tragedy of the Commons*, Science 162: 1243-1248.

(Sachs01b) Sachs, Jeffery, Melinger, Andrew, and J. Gallup (2001) *Geography of Poverty and Wealth*, Scientific American, March 2001.

(Sachs01) Sachs, Jeffrey and Andrew M. Warner (2001) *The Curse of Natural Resources*, European Economic Review 45: 827-838.

(Weiss01) Weiss, H. and R. Bradley (2001) *What Drives Societal Collapse?* Science 292: 609-610.

**Grading.** Your grade will be obtained by combining your performance in a number of quizzes, individual homework, a midterm, and a final examination.

Your essay will discuss in 2 pages (3 maximum) a current issue related to the interaction between economic growth and the environment. Examples of topics are: (1) The impact of a current natural disaster; (2) a recent change in environmental laws; (3) the outcome of a recent international meeting related to the environment; (4) a specific environmental issue in a particular country. The final exam is cumulative; quizzes may take place at the beginning of any class and will test students on the reading required for that class period or on anything discussed in the previous class.

More specifically:

homework and quizzes	midterm	final exam	essay
15	30	45	10

**Course syllabus, Fall 2012.**

**WEEK 1** Introduction to economics.

Reading: Textbook Chapter: "[How Economists Work](#)".

PART 1. FROM NATURE TO ECONOMIC GROWTH: How the environment affects and has affected economic growth.

**WEEK 2** Some basic tools.

Session 1: Thinking like an economist.

Session 2: National income accounting; measuring wealth, well-being, and economic growth.

Reading: Textbook Chapter: "[The Measurement of National Income](#)".

**WEEK \_3** Supply and demand and elasticity.

Session 1: The Supply and demand framework.

Reading: Textbook Chapter "[Demand, Supply, and Price](#)".

Session 2: Elasticity.

Reading: Textbook Chapter "[Elasticity](#)".

**WEEK \_4** Geography and economic development.

Session 1. Impact of geographical factors on economic growth and development, Types of resources and capitals.

Reading: Sachs01b.

Session 2. Introduction to trade theory.

Reading: Textbook Chapter "[Comparative Advantage and the Gains from International Trade](#)".

**WEEK \_5** The resource curse; microeconomics.

Session 1. The resource curse and its explanation.

Reading: Sachs01 and Brunn-Bulte08.

Session 3. Introduction to the theory of consumer choice.

**WEEK \_6** Economic growth.

Session 1: Natural disasters and economic growth.

Session 2: Introduction to economic growth. The Malthusian model.

Reading: Textbook Chapter "[Economic Growth](#)".

**WEEK \_7** Long-term economic growth.

Session 1. Impact of the environment on economic development.

Reading: Diamond02, Diamond97.

Session 2: More economic growth.

Reading: Textbook Chapter "[Long-run Economic Growth](#)".

**WEEK \_8** Midterm review, and midterm examination.

PART 2. FROM ECONOMIC GROWTH TO THE ENVIRONMENT: How growing economies transform their environment.

**WEEK\_9** Supply and demand; microeconomics.

Session 1: Applications of Supply and Demand.

Reading: Textbook Chapter "[Markets in Action](#)".

Session 2: Introduction to firm theory.

**WEEKS\_10** Externalities.

Session 1: Externalities: Theory and examples.

Reading: Textbook Chapter "[Externalities](#)", and Hardin68.

Session 2: Introduction to consumer theory.

**WEEK\_11** The Population problem; income inequalities.

Session 1: The population problem.

Reading: Cohen03.

Session 2: Income inequalities: theory and evidence.

SHORT PAPER DUE BEGINNING OF SESSION 2.

**WEEK\_12** The valuation of environmental services; environmental protection.

Session 1: The valuation of environmental services.

Reading: Costanza97, Alexander99.

Session 2: Environmental protection.

Reading: Textbook Chapter "[The Economics of Environmental Protection](#)".

**WEEK\_13** Past and future.

Session 1: Past societal collapses.

Reading: Weiss01.

Session 2: Sustainable development.

Reading: Textbook Chapter "[The Quest for Sustainable Development](#)" and Arrow95.

**WEEK\_14** Review week.

FINAL EXAM