Human Ecology and Sustainable Development

Course number U9240
Fall 2005
Mondays & Wednesdays 10:00 AM – 11:50 AM
International Affairs Building 1302

Professor Jeffrey D. Sachs
sachs@columbia.edu
Office: Low Library 314
Office Hours: by appointment only (Heidi Kleedtke 212-854-8704)

Teaching Associate Nori Tarui
nt2135@columbia.edu
Office: B-15 Hogan Hall (212-854-7586)
Office Hours: To be announced

This course will meet once a week in lecture, and once a week in section.

Course Description
This course describes the interactions between physical ecology and economic development, and stresses the two-way interactions between the physical environment and economic development. Ecological constraints (climate, disease ecology, physical resources such as soils and energy sources, topography and transport conditions) significantly shape the patterns of economic development, demography, and wealth and poverty. At the same time, anthropogenic activities (farming, resource depletion, demographic stresses, energy use) change the physical environment. The course aims to give a rigorous treatment of this two-way interaction, building on a rigorous foundation of earth systems processes to understand the ecological bases of human settlement.

Evaluation and Grading
There will be one midterm exam, a final exam, and two problem sets.
The course grade will be based on:

Midterm: 30%
Problem Sets 20%
Final Exam 50%

Main Texts
Lecture Schedule

September 7 (W): The Challenge of Sustainable Development


September 12 (M): Economic Geography


September 21 (W): Climate Systems

Strahler and Strahler, especially Chapters 6-7

September 28 (W): Basic growth models

David Weil, *Economic Growth*, Chapter 3, Chapter 8


October 5 (W): Poverty Traps and solutions


October 19 (W): The challenges of sustainability


October 24 (M): Economics of renewable resources: fisheries, forests, aquifers


R. Kerry Turner et al., *Environmental Economics*, Part V


October 31 (M): Economics of non-renewable resources: energy


November 7 (M): Population Change


Weil, *Economic Growth*, Chapter 4-5


Mark Kot, *Elements of Mathematical Ecology*, Chapter 1

November 16 (W): Managing Pollution

Turner et al., *Environmental Economics*, Parts IV & VI

November 21 (M): Managing biodiversity and ecosystem services

November 28 (M): Infectious Disease Control


December 5 (M): Sustainable farming systems


December 12 (M): Managing Climate Change


