ECON/NREM 458 O: Project Evaluation and Resource Management

Course description: Many economies face the dilemma of how to develop without degrading the environment. This course extends traditional benefit-cost analysis, policy evaluation, and other tools of microeconomics to show how economic development in Hawaii, the U.S. and Asia can be pursued in harmony with environmental stewardship. Topics include global warming, pollution, deforestation, biodiversity, water management, valuing and conserving Hawaii’s environmental resources, sustainable development, and win-win environmentalism.

Prerequisite: Econ 301 (Intermediate Micro) or instructor’s permission.

Office hrs: Wed. 1:30-3 or by appt. (jimr@hawaii.edu)


Tentative outline of topics:
I. The role of government and the value of the environomy
   A. When are markets efficient?
   B. When are they not and what can be done?
   C. What about the poor?
   D. Reading
      1. Tietenberg, ch. 2
      2. Krugman, Earth in the Balance Sheet, NY Times, 4/17/01,
         http://web.mit.edu/krugman/www/green.html

II. Pollution solutions
   A. Tietenberg, ch. 15-20.
   B. T, 21 (skim).

III. Natural resources, biodiversity, and conservation projects
   A. Two period model from T, ch 5 and T, ch. 7
   B. Non-renewables: ch 7 and 8
   C. Recyclables and renewables: ch 9, 10, 12, 13.
      http://www.hawaiireporter.com/story.aspx?b7449a5b-81b4-4532-902d-1ac1dc36fb4d

IV. Benefit-cost analysis, environmental valuation, and Hawaii’s environomy
   A. Gruber, Public Finance and Public Policy, ch. 8.
   B. T, ch. 3
   C. Perman, Natural Resources and the Environment, ch 12.
   E. R’set, Fixed Rail: Another Case of Blackhole Economics, Hawaii Reporter, 11/12/03.

IV. Sustainable development and green accounting
   A. Rest of T, ch. 5
   B. T, chs. 22-24
   D. Nordhaus, Nature’s Numbers (excerpts)

Preliminary and tentative list of topics:
1. Intro and partial equilibrium versions of market efficiency and failure.
2. Finish 1, review and practice quiz
3. Efficiency with many markets; theorem 1a.
4. Thms 1b (bliss pt), 2ab (market failure/Pigouvian taxes); intro to road pricing, unintended consequences of gas caps, begin 4b. Assign: Finish Tietenberg 4, read welfare econ class notes (458 tray).
5. Finish 4ab, begin Coase (3ab) begin pollution solutions (Tietenberg, 15).
6. 3ab, and ch 15 continued (bilateral, uniformly mixed, and multiple R/S types of pollution).
7. Finish Coase, Tietenberg15; begin 16.
8. More ch 16; Q&A,
9: T17; EPS (little bubble-> netting; big bubble->offset; banking), cap and trade; APS; exchange rate trading and exposure trading.
10: Finish 17 including transboundary pollution & global warming; begin 18.
11: Continue mobile source pollution, congestion pricing, railing against rail; water pollution.
12: Ch 20 (inducing optimal precaution: product liability, Learned Hand).
13: T, 5 (two period model; 70’s oil price shocks
14-15: two-period w/ extraction costs, w/ monopoly; T, 7-8 (Salant model; price caps; Pearce equation) and renewable (fish) model from ch 4.
16: T, 10
17. Review; quiz
18-19: Renewables/recyclables and public policy (12, 13, 9; bottle bill essay in Hawaii Reporter)
20: Project evaluation (incl. shadow pricing, discounting, indirect/intangible/secondary benefits/risk); Gruber 8 (in tray) and end of Tietenberg 3.
21: Proj eval cont; beginning of T3 (environmental valuation);
22: Env valuation (CV, recreation demand, hedonics, avoidance) cont. (Perman 12).
23: Kaiser, et al. (Pap and Kim)
25: Q&A; quiz
26: Development and the environment (Dasgupta triangle, preservation vs. rent-seeking, win-win environmentalism) (T22, IVC)
27: T23 (Hartwick rule, opusstimal growth)
28: Ch 24; green accounting, NNP, sustainable income; Emily.
29: Rail vs. HOTway (Kevin)
30: Review

Course requirements and grading

Group or individual project report\textsuperscript{ii}: 22%
Quizzes\textsuperscript{iii}: 19%
Final\textsuperscript{iv}: 36%
Other Oral reports\textsuperscript{v}: 18%
Homework & Citizenship\textsuperscript{vi}: 5%

\textsuperscript{ii}Any topic related to text, lectures, and/or syllabus. Local relevance is encouraged, not required. Power Pt presentation: 10min for individual report; 15 min for group of two; 20 min for group of three. Target: 8-10 pages plus figures, references etc. Class presentation may be substituted for paper. For groups of 2 or 3, paper and presentation is required. Proposal due 4\textsuperscript{th} week. Class presentations must be scheduled in advance before the last 2 weeks of class.

\textsuperscript{iii}First quiz (one point) is on Jan 17. Remaining quizzes will be announced one week in advance. No alternative times will be offered except in extraordinary cases. Students may be excused a priori for illness or non-health emergency with appropriate verification. Otherwise, missed exams are recorded as zero points. Late registrants are responsible for all course content and exams.

\textsuperscript{iv}Please see UHM Schedule of Classes. Same rules regarding missed exams apply.

\textsuperscript{v}First one on substantive aspect of the course, e.g. chapter. Second on how to make oral reports.

\textsuperscript{vi}Contributions to the learning community (including class participation, additional presentations, facilitating availability of course materials, bringing pertinent current articles, websites etc. to class’s attention).