

## 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)

Text: Tietenberg, *Environmental Economics and Policy*, 7<sup>th</sup> ed., 2006

### Tentative outline of topics:

#### I. The role of government and the value of the environment

- A. When are markets efficient?
- B. When are they not and what can be done?
- C. What about the poor?
- D. Reading
  1. Tietenberg, chs. 1, 2 and 4
  2. Krugman, Earth in the Balance Sheet, NY Times, 4/17/01, <http://web.mit.edu/krugman/www/green.html>
  3. Roumasset, Welfare Economics: Axiomatic Approach to the Minimal Role of Govt.

#### 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.

#### IV. Benefit-cost analysis, environmental valuation, and Hawaii's environment

- A. Gruber, *Public Finance and Public Policy*, ch. 8.
- B. T, ch. 3
- C. Perman, *Natural Resources and the Environment*, ch 12.
- D. Kaiser et. al. at <http://www.uhero.hawaii.edu/workingpaper/HawaiiEnviroEvaluation.pdf>

#### IV. Sustainable development and green accounting

- E. Rest of T, ch. 5
- F. T, chs. 22-24
- G. Endress and Roumasset, "The Yin and Yang of Sustainable Development: A case for win-win environmentalism," *J.Asia Pacific Economy* 1(2): 185-194 (1996).
- H. Nordhaus, *Nature's Numbers* (excerpts)

Tentative lecture schedule:

1. Intro and partial equilibrium versions of market efficiency and failure.
2. Finish 1, review and practice quiz
3. Efficiency with many markets
4. Market failure theorems
5. Pollution solutions (Tietenberg, 15).
6. Finish 15
7. T: 16
8. Review; quiz
- 9-12. T: 17-20.
- 13-15. Resource econ and public policy (T: 5, 7, 8)
16. Review; quiz
- 17-19. Renewables/recyclables and public policy (9, 10, 12, 13)
- 20-24. Project evaluation; environmental valuation (incl. shadow pricing, discounting, indirect/intangible/secondary benefits/risk; CV, recreation demand, hedonics, avoidance)
25. Review; quiz
- 26-29. Development and the environment; green accounting (Dasgupta triangle, preservation strategy and result, profit max and rent-seeking, Hartwick rule, opstimal growth, win-win env, Nature's Numbers, NNP and sustainable income.)
30. Review

#### Course requirements and grading

Group or individual project <sup>i</sup> :	21%
Quizzes <sup>ii</sup> :	25%
Final <sup>iii</sup> :	36%
Homework & Citizenship <sup>iv</sup> :	18%

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<sup>i</sup>Any topic related to text, lectures, and/or syllabus. Local relevance is encouraged, not required. Max is 20 pgs; no min. 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.

<sup>ii</sup> First quiz (one point) is on Aug 24. 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.

<sup>iii</sup> Final will be given according to the UHM Schedule of Classes. Same rules regarding missed exams apply.

<sup>iv</sup> 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).