

**AAE / ECON / Env. St. 343 review for Comprehensive Final Exam**  
**Exam to be held on Thursday, December 18, 2008 at 2:45 pm in CHEM 1351**

You should understand how to apply the concepts from the first two review sheets to real-world environmental policy issues. In addition, you should understand how to apply the following concepts (covered since midterm #2) to real-world environmental policy issues:

- Resources, Energy and Sustainability
  - Hotelling's Rule
    - Intuition behind the rule
    - Applications of the rule if given demand,  $mc$ , discount rate, etc.
  - Marginal user cost
  - Other factors which affect resource allocation (e.g. substitutes, technology, exploration).
  - Scarcity indicators (resource lifetime, real prices, unit cost, marginal user cost)
  - Ehrlich / Simon bet and factors which mitigate resource scarcity
  - Economic growth and environmental kuznets curve (EKC)
  - Sustainable development
    - Rules (weak, strong, alternative strong sustainability)
    - Markets and sustainability (role of investment)
    - Hartwick rule
    - Daly's operational principles
- Strategic Interaction (Game Theory)
  - Prisoner's Dilemma and International Environmental Agreements (IEAs)
  - Nash Equilibrium
  - A Self-Governance Solution to Prisoner's Dilemmas
  - Repeated Games
    - Implications for cooperative solutions.
    - Credible threats.
  - Cooperative Games
    - Stability of various coalitions.
    - Budget constraint; Individual Rationality constraint; Group Rationality constraint.
    - The relevance of cooperative games to international agreements.
- Climate Change: know some basics
  - What causes climate change?
  - Current policy (i.e. Kyoto Protocol).
  - Costs / Benefits of reducing greenhouse gases (ghgs).
  - 'Broad then deep' strategy => rationale behind it and relationship to Kyoto Protocol.
  - Game theory insights regarding the design of Kyoto.
  - Basic policy instruments.
  - Influence of efficiency on international environmental agreements.