This course introduces students to the field of ecological economics and explores how the field’s simple premise — to recognize the fundamental dependence of the economic system on the environment — complicates matters for conventional economic theory and practice. While focusing on ecological economics, the intent is to expose students to a variety of thought on the theoretical relationship between economics and environment without ignoring questions of applications and implementation. Familiarity with neoclassical economics is helpful but not required.

Herman E. Daly, one of the founders of the discipline, taught this course for many years until his retirement in 2010. I was fortunate to study with Professor Daly and am thrilled to continue the tradition of teaching ecological economics at the University of Maryland’s School of Public Policy.

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Required books
- *Ecological Economics: Principles and applications* by Herman Daly and Joshua Farley; 1st or 2nd edition (textbook chapters in the syllabus based on 2nd edition)
- *Capitalism 3.0 (A Guide to Reclaiming the Commons)* by Peter Barnes, 2006

GRADE ASSIGNMENT

- Participation = 20% of the grade
  Students are expected to arrive prepared to engage in open and active discussion.
  Laptop and smartphone use allowed to take notes only.

- Two papers = 50% of the grade
  Students will receive further instructions on the papers in class. Outlines for each paper will be provided.

- Presentation = 10% of the grade
  Students will present one of their classmates’ papers in class.

- Final exam = 20% of the grade
  The final exam will consist mainly of short essay questions.

These books are required for purchase; all other materials will be posted on ELMS.
www.elms.umd.edu
### 1. The roots and rise of neoclassical economics

- Ancient roots of economics
- Early economic questions: Trade vs. self-sufficiency; class and hierarchy; private property; distribution of income; household management
- Economics and theology
- Plato and Aristotle
- Mercantilism & colonialism
- Rise of the state
- Accumulation of wealth as an end
- Richard Cantillon, 1st economist?
- The English Classical School
- End as given
- Adam Smith
- Thomas Malthus & Population growth
- Jean-Baptiste Say & Say’s Law
- David Ricardo
- J.S. Mill & Compassionate utilitarianism
- Stationary state
- Political economy sunsets
- Neoclassical economics rises
- Formal price theory develops (Jevons and marginal utility theory of value)
- Utility theories of demand and supply
- Alfred Marshall & Firm theory
- Allocation of resources; constrained-maximization decision-making
- Logic of choice
- Macroeconomics & Instability
- John Maynard Keynes & End of laissez-faire

#### Readings
- Readings on ELMS (September 2, 2014)

### 2. Dealing with social costs

- Wealth as an end
- Wealth as a mean
- Simonde de Sismondi
- Aristotle and “chrematistics” vs. “political economy”
- Crafts-based society vs. industrial society
- John Ruskin
- Xenophon’s true wealth vs. illth
- John Hobson
- Questioning the Ultimate End
- Organic Welfare
- Richard Tawney
- “The Acquisitive Society”
- Principle of limitation
- Economic activity as a servant, not the master
- Natural economic order?
- Social costs
- Back to political economy
- Classical economists and social costs
- The Historicists and social costs
- The Socialists and social costs
- Pigou and social costs
- Veblen and social costs
- Monopolies and social costs
- Dynamic analysis and social costs
- Personal maladustments
- Roots of environmental economics
- Silent Spring
- Internalizing externalities
- Welfare economics
- Natural resource economics
- Environmental economics
- Pareto
- Coase
- Sustainable development and the Brundtland Commission
- Alternative GNP indicators
- Economic valuations
- Stated preference
- Revealed preference (hedonic regressions)
- Nonuse values
- Cost-benefit analyses
- Discount rates
- Command and control policy instruments
- Market-based policy instruments
- Double dividends
- Introduction to Ecological Economics

#### Readings
- Readings on ELMS (September 9, 2014)

### 3. The roots of ecological economics

- Materialism
- Al Gore’s Global Marshall Plan
- History of materialism and Western identity
- Separation of facts and values
- Individual identity and materialism
- Materialist philosophy
- and the Greeks
- Mind-body problem
- Religion vs. Science
- Positivism as philosophy of science
- Atomism; mechanism; universalism; objectivism and positivism
- Norgaard’s coevolutionary framework
- John Stuart Mill and utilitarianism
- Ethics and economics
- Individual vs. whole
- Global sustainability
- Political internalization vs. Economic internalization
- Distributional efficiency
- Role of private property
- John Stuart Mill’s stationary state
- Self-regulating behavior
- Non-interference principle
- Marketplace as a “system of mutual coercion”
- True liberty
- Social beings
- Hegel
- Obligation to reciprocate
- Formulating ecological economics
- Stock & Throughput
- What is economic?
- Formulating a steady-state economics

#### Readings
- Readings on ELMS (September 16, 2014)

### 4. How did we get here?

- Why care about economics?
- Economists in governments
- Rise of economists in the 1930s and 1940s
- GATT (WTO)
- 1960s and trade
- 1970s and inflation
- Bretton Woods > IMF > floating exchange rates
- 1990s and beyond: Free trade
- Economists and politics
- Economists in the United States
- Council of Economic Advisers
- Office of Management and Budget
- Congressional Budget Office
- Macroeconomic policy
- Monetary policy
- Rise of CBAs
- Current role of economists
- Economists and the environment
- Pollution law vs. Natural resource law
- Conquering wilderness
- “Partially cultivated country”
- Preservationism vs. “Wise use” and conservationism
- Main environmental laws: CAA, CWA, ESA
- Rise of advocacy organizations
- Ubiquitous uncertainty
- Environmental policy through litigation
- Traditional regulatory tools: Prescriptive regulation; property rights; penalties; payments and persuasion
- Problems with policy instruments: Efficiency; administrative costs; standards vs. technology
- Science vs. Congress
- Administration of environmental law
- 200 years from now

#### Readings
- Readings on ELMS (September 23, 2014)

### 5. Introduction to ecological economics

- Economics
- Evolution of economics
- Ecological constraints
- The Whole & The Part
- Optimal Scale & Uneconomic Growth
- Throughput
- Thermodynamics
- Ends & Means
- Steady-state economy
- Finite planet
- Entropy & Economics
- Stock-flow resources vs. Fund-services resources
- Public goods
- Abiotic resources: Fossil fuels, minerals, water, land, and solar energy
- Biotic resources: Renewable resources, ecosystem services, and waste absorption capacity
- From empty to full world

#### Readings
- Ecological Economics, Chapters 1-7
- Readings on ELMS (September 30, 2014)
### 6. Ecological economics: Microeconomics
- Basic market equation
- Market imperfections: Monopoly, non-perfect competition, transaction costs, non-price adjustments
- Supply & Demand curves
- Shortages & Surpluses
- Elasticity
- Production functions
- Substitutability & Complementarity
- Utility functions
- Market goods vs. Public goods
- Externalities
- Intertemporal discounting
- Market failure & Abiotic resources
- Tragedy of the commons
- Legislating temperance
- System stability
- Carrying capacity

October 7, 2014

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### 7. Ecological economics: Microeconomics, continued & Macroeconomics, introduction
- Market failure & Biotic resources
- Technical solutions
- Population growth
- Jevons and the Coal Question
- Economic availability vs. Physical availability of resources
- Direct and indirect "rebond effects" from energy efficiency
- Intergenerational equity
- Measuring welfare
- Human needs and the economy
- Use value vs. exchange value
- Limits of regulation and privatization
- New commons

October 14, 2014

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| Capitalism 3.0 |

### 8. Ecological economics: Macroeconomics, continued
- Back to basics
- Nature and the economy
- 1st Law of Thermodynamics: Conservation of energy
- 2nd Law of Thermodynamics: What goes in ≠ what goes out
- Qualitative changes
- Entropy
- Free energy & Bound energy
- Life & Entropy
- Free recycling
- Virtual wealth
- Seigniorage
- Federal reserve system
- Money
- Distribution & Pareto optimality
- Distribution and society
- Normative questions
- Discounting
- Savings & Investment
- Monetary market (interest rates & liquidity)
- The IS-LM model
- Monetary and fiscal policy
- Inflation
- Unemployment
- Commons trusts, dividends and rent

October 21, 2014

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| Readings on ELMS |

### 9. Ecological economics: The international dimension
- Absolute advantage & Comparative advantage
- Capital mobility
- Globalization
- Patents
- Monopolies
- Externalities & Competition
- Specialization
- Sustainable scale
- Just distribution
- Food security and free trade
- Balance of payments
- Exchange rates
- Economic stability
- Estimating physical flows
- Ecological rucksack
- Indirect resource flows in trade
- Input-output models
- Shifting environmental burden
- Environmental Kuznets curves
- Monitoring and transaction costs of natural resource governance
- Trade impacts on governance

October 28, 2014

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| Readings on ELMS |

### 10. Ecological economics: Policy implications
- Six policy design principles
- Controlling throughput
- Property rights
- Sustainable scale
- Direct regulation
- Pigouvian taxes & Pigouvian subsidies
- Tradeable permits
- Just distribution
- Caps on income and wealth
- Minimum income
- Returns to capital
- Efficient allocation
- Nonmarket goods and services
- Uncertainty & Ignorance
- Time and valuation
- Asymmetric information
- Subsidies for nonmarket goods
- Seigniorage, again
- International policies
- Efficiency, reconsidered
- Looking ahead
- The problem with growth economics
- Ten policy proposals

November 4, 2014

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### 11. Ecological economics: Applied
- Models of the economy
- Creating a shared vision
- Vision 2050
- Leverage points for changing systems
- Making democracy work
- Blueprint for action
- Examples
- Modeling examples
- Societal collapses
- Testing likelihood of collapse
- Inequality and collapse
- More modeling
- Making commons happen

November 11, 2014

| 1st PAPER DUE |

| Capitalism 3.0 |

### 12. Ecological economics: Applied, continued
- Realism vs. hopefulness
- America’s present
- America’s future
- Payments for ecosystem services
- Differences in approaches: Environmental economics vs. ecological economics
- Issues with payments: Measurement, bundling, scale-matching, property rights, distribution, funding, adaptive management
- Institutional adjustments
- Case of agricultural production
- Agroecology as a solution
- Institutional promotion of agroecology
- Local conditions and solutions
- Private vs. public sector
- Case study
- Complexities abound
- Public-private partnerships
- Business case for action
- Understanding the system
- Determining the baseline
- Why did it work?
- Public responsibility?
- An update on the Genuine Progress Indicator
- Welfare equivalent income
- Sustainable income
- Net social profit
- Critiques of the GPI
- GPI components
- Investing in natural resources
- Role of public utilities
- Seattle example
- Importance of accounting

November 18, 2014

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<td>Critiquing “economics” &amp; &quot;ecological&quot;</td>
<td>November 25, 2014</td>
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<td>◆ Common misunderstandings ◆ Terminology issues ◆ Steady-state economics a sign of despair? ◆ Evolution within constraints ◆ Clarifying the “impossibility” theorem ◆ Sustaining employment ◆ Space colonization ◆ Julian Simon, the “doomsayer” ◆ Deconstructing “limits to growth” ◆ Long-run vs. Short-run effects ◆ From a closed system to an open one ◆ Resource availability depends on productivity and creativity ◆ More people, more creativity ◆ Humans as supreme ◆ Arbitrary anti-humanism ◆ Rebuttal to Julian Simon ◆ Debating the future of humankind ◆ Use and misuse of statistics ◆ Scarcity of resources and prices ◆ Stock and flow confusion ◆ Assumptions fill in gaps ◆ Defining the “natural environment” ◆ Biodiversity in suburbia ◆ Scientization of the environment ◆ Feelings and meanings in places ◆ Natural history vs. Ecological theory ◆ Knowledge by “acquaintance” vs. Knowledge by “abstraction” ◆ EPA and “ecological endpoints” ◆ Ecological risk assessments ◆ On to ecosystem services ◆ Human disturbance ◆ Absence of stability ◆ Theater for landscapes ◆ Intelligent design for agnostics ◆ Aesthetic education ◆ Deep universal laws of ecology ◆ Laws, patterns, mechanisms, and generalizations ◆ Contingencies ◆ Variations of common themes ◆ Establishing management tools ◆ Community ecology complicates ◆ Macroecology ◆ The middle ground is a mess ◆</td>
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<td>Future of ecological economics</td>
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<td>◆ Methodological pluralism ◆ Climate change valuations ◆ CBAs, again ◆ Kuhnian paradigm ◆ Reinvigorating ecological economics ◆ Sustainable de-growth as an alternative to sustainable development ◆ Quality vs. quantity ◆ Enjoying a good life ◆ Decline of “sustainable development” ◆</td>
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