

Syllabus

Political Economy for a Finite Planet

Environmental Studies Program

Washington University in St. Louis

Instructor: Eric Zencey, Fellow, Gund Institute for Ecological Economics, University of Vermont

Term: Spring 2017

Course designation: EnSt 310

Office Hours: T, Th 1:30 to 2:30 or by arrangement

Office Location: 334 Rudolf Hall

Phone: 935 3388 or 802 477 2277

E-mail: eric.zencey@uvm.edu

Class meets : T, TH 2:30 – 4:00 Cupples I

Course description

Our planet is finite. Our political and economic systems were designed for an infinite planet.

These difficult truths will frame this survey of an emerging school of thought in economics that recognizes that there are limits to the amount of economic activity the planet can support—that we need, in effect, political and economic theory for a finite planet. Neoclassical economics (or NCE), the reigning paradigm in economics today, explicitly assumes that we humans will always be able to invent our way around any physical constraint or limit. With this faith in technical innovation, NCE can confidently predict that there is no possible limit to economic growth. Ecological Economics (EE) differs: grounded in thermodynamics (the science of energy), EE finds that faith in perpetual economic growth is but a version of faith in perpetual motion—a chimera ruled out by physical law.

In addition to surveying the foundations, scope and conceptual novelties of the discipline of Ecological Economics, this course will also pursue inquiry into the historical origins of our political economy and its possible future: what can be done to transform it into an ecologically and socially sustainable system. Topics covered range from the laws of thermodynamics to the laws of supply and demand; from the “empty planet” assumptions encoded into the U.S. Constitution by way of the work of 18th century democratic theorist John Locke to the probable future of Fifth Amendment Takings cases (which will prove to be one of the contact points between infinite planet expectations and finite planet reality); from a history of human energy use to alternative visions for how our economy (and its political controls) should be understood, maintained and operated.

The main goal of our studies will be to empower us to become informed participants in our culture’s transition to a sustainable relationship with the ecosystems in which we are embedded. This transition is inevitable; by definition unsustainable systems do not last. The only question is what sort of sustainable system we will have—one we choose as a desirable state or one that evolves through crisis, accident, and catastrophe; or (most likely) something that is a mixture of both. Our particular focus will be an examination of critical leverage points where efforts to change the system will have amplified effect, with energy, money, food, economic theory, and property law prominent among them.

Objectives

This course examines the ways that contemporary economic and political theory, and institutions and practices grounded in them, encode the assumption that the planet is infinite. It asks you to explore and

evaluate ways of adapting those ideas, institutions and practices to a world that has ecological limits. There is a growing awareness in many quarters that our physical infrastructure needs to be adapted to finite-planet reality: we need solar and other renewable energy systems, we need a post-petroleum agriculture, we need mass transit, we need compact village and urban centers in a healthy, working landscape. Less obvious are the changes that need to be made to our intellectual infrastructure. This course is focused on those changes—with Ecological Economics being a prominent part, perhaps even the foundation, of the body of understanding that needs to be adopted.

In service to the goal of helping you become an informed participant, even a leader, in our culture's transition to a sustainable relationship to its host ecosystems, the course has several subsidiary objectives. These include developing your understanding of:

- The three facets--ecological, economic, and social--of sustainability;
- The first and second laws of thermodynamics and their importance to economic and ecological theorizing and modeling;
- Human energy use as a powerful explanatory factor in world history;
- The origins of modern democratic and economic theory in 18th and 19th century societies that inhabited a less populous, less developed planet on which infinite economic growth seemed feasible;
- The concepts of natural capital and ecosystem services;
- The perpetual-growth, infinite-planet assumptions implicit in mainstream political and economic theory;
- Contemporary crises brought on by the source-and-sink limits of planetary ecosystems, including climate change, peak oil, peak agriculture, peak water use, and peak extinction rates;
- The ethical implications of resource use, wealth creation and wealth distribution, including questions of intra-social, international and intergenerational equity and justice;
- Specific leverage points for changing an unsustainable economy, including:
 - Use of alternative indicators (like the Genuine Progress Indicator, Gross National Happiness, the Happy Planet Index, etc.);
 - Acknowledgement and measurement of the benefits of social capital;
 - Revision of a financial system dependent on infinite economic growth;
 - Changes in property law to reflect the value of ecosystem services;
 - Achieving sustainable throughput of matter and energy in the economy with a focus on energy, water and food.

Format of the Course

The class is small enough to run as a seminar, which means in-class discussion will be central to your learning experience. Participation therefore counts for a great deal (see "How you will be evaluated," below). You'll have focused assignments (assigned readings and regular writing in your learning journal, described below) framing the discussion each session. For some class meetings you'll have an opportunity to practice the skill of presenting to a small group, as you do smaller research projects and share the results (see "**scavenger hunt**" **assignments** below).

Writing and Research Assignments

In addition to completing the assigned readings, preparation for class will include writing regularly in your **learning journal**. You'll use the Blackboard Journal feature to do this so that I can review your entry before class. The writing can be as long and as detailed as you like; if you find that writing helps you think and absorb material, by all means use the Journal for that. You might also use it to reflect on how what you learn in this course leads to new understandings of other learning you've had, or of current political and economic issues. But lengthy, integrative entries that do this are not a requirement. The expectation is that for the first half of the semester you will write a brief (150- 300 word) entry before each class meeting in which you recount a few of the main "take aways" from that day's reading assignment and

identify two or more questions that you think would be useful avenues of discussion for the class. For the second half of the semester, as work on your culminating project ramps up, the expectation is that you will produce one Learning Journal entry per week. Entries are due Tuesday and Thursday by 9:00 a.m. so that I can review them before class. You'll get a general sort of response to your LJ entry but individual entries won't be graded. Overall, though, the journal is worth 10% of your grade.

In addition to the learning journal, writing assignments will also include **three reflective and integrative essays** (of 500 to 800 words), a **final project** (of 3000 to 3500 words; see the fuller description below) and a final **narrative self-evaluation** of your experience and work in the course. The reflective papers and the final project will be submitted for grading. For all graded work, you'll have the chance to submit a draft and then revise it in response to feedback before getting a final grade. Your final grade for any revised writing will reflect a 40% - 60% split: 40% for the first submission, 60% for the revision.

In addition to the reading and the journal writing, sometimes the assignment for class will include a small-scale research project. (One possibility, by way of example: "find and bring to the next class several examples of how the term 'sustainable' has been used in news media.") I think of these as "**scavenger hunt**" assignments—everyone in the class goes out to see what they can find and in the next class we compare findings. (Findings from textual and most other sources need to be documented and cited appropriately.)

For your convenience, here descriptions of the various kinds of writing:

Learning Journal: This you keep regularly, using the Journal function on the course Blackboard site. The course requirement is that for the first half of the semester you write one entry for each class session (*before* the class session), in which you respond in some way to the reading assignment. That's the minimum. You are welcome to use the learning journal more ambitiously than that. You could use it to record responses to the class discussion (thus framing each class session with both a before and an after entry). You could keep a regular record of the connections you make between the course material and other aspects of your experience (the learning you're doing in other courses, the conversations you have outside of class, your experience of news and other media, and so on). You can highlight ideas, contradictions, or questions that arise that might form the basis for a reflective essay or your final project.

Individual entries in the Learning Journal will not be graded, but the keeping of the journal is worth 10% of your final grade. If you keep it regularly and well (i.e., meet the minimum expectation outlined here) you'll get an A for 10% of your grade. You'll lose some consideration if the required entries are sloppy, ungrammatical, perfunctory, or give any other indication that the thinking and writing is slapdash.

Reflective essays: You'll submit three reflective essays for grading during the semester. One may be an extension of a learning journal entry, if you wish; the others (or all three) will be in response to a prompt set by the instructor. You'll have the opportunity to revise each of these essays in response to feedback from the instructor, and your final grade on each will be a 40-60 blending of the grades on the original (40) and the revised (60) paper.

Final Project: The subject, scope and form of your final, capstone project will emerge in discussions with me and other classmates. (In the past, students in the course have chosen to do "leverage essays"—essays about particular points in the infinite planet system which, if changed, would lead to other positive changes—while some have chosen to work on a compilation of the Missouri Genuine Progress Indicator for presentation to the general public.) The purpose of the capstone project is to integrate aspects of the course content and to give you practice at completing a significant research project that extends your knowledge.

You'll tackle the project in stages. The course schedule shows five distinct deadlines for the submission of these stages. They are:

Week 8: Thesis statement (problem-solution pairing) is due

Week 10: Preliminary conceptual outline and annotated bibliography is due

Week 12: Detailed structural outline first 3 paragraphs and writing plan due

Week 14: Completed paper due [comments on this draft will be returned w/in a week),

This draft is not a “rough” draft; it’s worth 40% of your grade on the paper

TBD: Final version of paper due; worth 60% of the grade on the paper

Portfolio: Taken together, your three graded essays, the final project and your narrative self evaluation constitute your portfolio for the course. The portfolio is due when the final paper is due.

Narrative self-evaluation. The narrative self-evaluation is your summative reflection on your learning for the semester. It will be at least 750 words but could be significantly longer if you find it useful to go into greater detail. The self-evaluation is yours to create for yourself—it isn’t graded—and it should respond to questions like these:

- What do you know now and what can you do now that you didn’t know and couldn’t do before?
- What were the principle learning activities that brought you this knowledge and these skills?
- What resources did you make use of? (List books, articles, other readings, movies, presentations, lectures, interviews done, discussions had, etc.)
- How did you demonstrate your learning during the semester; that is, what products of study did you create?
- What were some of the high points of your learning in this subject this semester? What really worked, what do you feel you did really well or learned a lot from? Why?
- What were one or two low points? What didn’t work, what do you feel you could have done better or would rather not have done at all? Why?
- Does completion of this work this semester point to other learning agendas for you in the future? If so, what’s next?

Other Expectations

Participation: It is expected that you will attend every class and participate fully in the class, including making contributions to discussion. Personal or family emergencies that would require you to violate the attendance expectation are covered under college policy.

Your class participation should show that you are prepared for class—have done the reading and any other assignment—and that you have comments or questions to share. Ideally I’d hear everyone’s voice at least once in every class.

The official policy for this class is no cuts. In practice this means your final grade will be reduced by 1% for each unexcused absence.

Excused absences include religious holidays; varsity games (of a team you’re on, of course); serious illness; and death in the family. If you cannot make a class for an excusable reason you need to inform an

instructor beforehand unless circumstances (such as, you were in a serious accident on the way to class) prevent this. You must also offer independent verification of the reason for the absence; otherwise the absence is unexcused. Unexcused absences include family vacation, wedding, having a plane ticket for travel that has you miss class, signing up for a field trip for another class, and of course oversleeping.

The relevant university policy on attendance is in the student handbook.

Group work and peer consulting and reviewing: At several points in the semester we'll do small group work. This will help ease you into another course expectation: you'll work with one or more other members of the class, to help each other to articulate your final project and to review drafts of the work at various stages.

Individual meetings with the instructor: You're expected to **meet with the instructor** for an individual appointment at least once during the semester; twice is good too. This expectation is part of your class participation and will contribute to your grade in that area. You are of course welcome (even expected!) to seek the instructor out during office hours (or other times by appointment) if you have any questions, issues, or problems arising from the class.

Methods of Evaluation

You'll be evaluated on your written work as collected in your portfolio; on whether your journal has been kept well and is serving you as a useful tool; on your class participation; on your performance on the midterm exam and several quizzes; on your performance as a peer collaborator and reviewer; and on the quality and clarity of your in-class presentations. Written work will be evaluated according to the writing rubrics that are included as part of this syllabus. I encourage you to think in terms of these rubrics when revising your own work and when helping classmates think about their writing. The relative weight that each of these products of study will have in determining your grade is given in a chart below.

Exams: There will be at least one, perhaps two quizzes during the semester checking your comprehension of course material (the technical vocabulary, concepts, theories and other content) and your ability to apply this material to events and circumstances in the world. The midterm will be a mixture of objective (short-answer, matching, fill-in-the-blank) and take-home essay under deadline (as in, you'll have perhaps 24 hours to prepare the essay and submit it). The final exam will be purely "objective" (multiple choice, short answer, etc.) and will cover the entire semester's learning with an emphasis on concepts, terms and material covered since the midterm.

Relative weights of study activities:

Product	Percentage of final grade
Three graded essays	15
Learning journal	10
Capstone project	15
Quizzes	15
Midterm exam	15
Final exam	20
Participation	10

Readings

There are two books on the syllabus that should be available from the bookstore.

Daly, Herman and Joshua Farley, *Ecological Economics: Principles and Applications*

Zencey, Eric. *The Other Road to Serfdom and the Path to Sustainable Democracy*.

(That's right—I've assigned a book I wrote. I did this because I want you to encounter the material in it and I certainly didn't want to lecture it all at you. Having you read it seemed the most efficient and effective way to communicate it to you.)

In the syllabus, "Zencey" refers to this book, while "D and F" refers of course to the other. If these books are NOT in the bookstore, I will make arrangements for you to have e-versions of the early parts of each available to you until they are.

Most of the other assigned reading will be found online, either on the course Blackboard site or easily found on the web. In some cases physical, hard-copy materials may have to be placed on reserve. NOTE: I'm exploring getting the readings to you in a course-pak, which I find preferable since you'd have hard copy to bring to class. Stay tuned.

Course expectations:

- read and understand the assigned texts, particularly the assigned portions of Herman Daly and Joshua Farley's *Ecological Economics: Principles and Applications*, and other readings giving historical context and applying the new economic paradigm to current environmental issues and problems;
- attend all class sessions (except when legitimately excused for medical, family or other acceptable reasons);
- comport yourself in class according to the expectations established by the instructor, including observing the NO SCREENS rule;
- make weekly or bi-weekly entries in a learning journal for review by the instructor;
- turn in all written work on time;
- participate in all in-class activities;
- produce written work, discussion contributions and assigned presentations that demonstrate your understanding of the readings and the concepts covered in discussion;
- complete a research ("term") paper, significant thinkpiece, or other integrative work, on a topic that has been reviewed and approved by the instructor;
- show evidence of your integration of your understanding of ecological economics into your thinking about current events and environmental issues;
- complete a narrative self-evaluation describing the trajectory of your learning through the semester.

You will be evaluated on:

- the evidence given by your writing and your discussion contributions of the degree to which you have understood the material being covered;
- the quality of your writing;
- the quality of your discussion contributions;
- attendance and completion of homeworks;
- your performance on a quiz and a midterm;
- the quality of your culminating project; and
- your performance on a final exam.

Rubrics for evaluating written work

	highest		average		failing
Context and purpose	Demonstrates very good understanding of context and purpose of the writing; is responsive to the assigned task, which focuses all elements in the work. Purpose is clear throughout.	Demonstrates adequate consideration of context and purpose and is mostly responsive to task. Purpose is evident nearly throughout	Begins to show awareness of context and purpose of the writing; is only partially responsive to task; purpose is sometimes obscured or not in evidence	Demonstrates minimal attention to context and purpose and little awareness of the expectations of the instructor or others as audience	Is off-task; displays no regard for expectations of instructor or audience
Content	Uses appropriate, relevant, compelling content, illustrating mastery of the topic and effectively communicating the writer's understanding	Uses appropriate and relevant content but fails to be fully compelling for want of additional relevant content; displays good acquaintance with but not mastery of topic	Uses appropriate and relevant content in some but not all of the work. Conveys marginally acceptable acquaintance with topic	Uses insufficient, inappropriate or irrelevant content; fails to convey sturdy acquaintance with topic	Has little to no appropriate or relevant content.
Conventions	Demonstrates detailed attention to and successful execution of a wide range of conventions particular to the discipline and/or writing task, including organization, content, presentation, and stylistic choices	Demonstrates consistent use of conventions, including organization, content, presentation, stylistic choices	Work is somewhat disorganized: elements of repetitious or apparently random presentation; some stylistic choices are inappropriate	Very little organizational effort is in evidence; presentation is confused and confusing; stylistic choices are mostly inappropriate	No organizational effort is in evidence; presentation is obscure and uncommunicative
Sources and evidence	Demonstrates skillful use of high-quality, credible, relevant sources and evidence to develop ideas relevant to purpose	Demonstrates consistent use of high-quality, credible, relevant sources and evidence to support ideas that are familiar within the discipline and supportive of purpose	Demonstrates an attempt to use high quality, credible, relevant sources and evidence but use of these is not consistent	Demonstrates an attempt to use sources and evidence, but these are not credible, high-quality, or relevant	Makes no attempt to use sources and evidence to support the purpose
Control of mechanics	Uses graceful language that skillfully communicates meaning; is virtually error-free	Uses straightforward language that conveys meaning to readers with clarity and has few errors of usage, spelling, punctuation, grammar, etc.	Uses serviceable language that generally conveys meaning with clarity; writing includes some errors	Gives evidence of lack of control of mechanics (spelling, punctuation, grammar, etc.). Work is not clear due to errors.	Gives little or no evidence of control of mechanics and fails to communicate clear meaning

Schedule of Course Content and readings

NOTE: This schedule is subject to change; all changes will be discussed/announced in class. Readings not from D & F or Zencey are available on Blackboard

First week: Introductions

1/17 Session one: Introductions; What's your watershed? Why Study Economics?; What is Ecological Economics? First look at the Laws of Thermodynamics.

1/19 Session two: report on watershed research. Introduction to Ecological Economics

Read: syllabus; Daly and Farley (D and F), to p. 35, introduction and chaps. 1 & 2.

Also: view Jon Erickson, "Crash Course in Ecological Economics" <https://www.youtube.com/watch?v=d05jEprJxtE>

Second Week: Thermodynamics and Economics: a new paradigm

1/24 Session one: Energy and Economics continued

Read: "Energy Literacy," pp. 3-24 from Butler, Lerch and Wuerthner, *The Energy Reader* and Naughton, "Thomas Kuhn: the man who changed the way the world looked at science," *The Guardian*, August 18, 2012.

Discussion: The first and second laws of thermodynamics continued. Paradigms in disciplines. Ecological Economics and Neoclassic Economics as competing paradigms.

1/26 Session two: Read D and F, Chaps. 3 & 4 (to p. 76) Also Zencey, "Dewey's Process of Inquiry." The Laws of thermodynamics continued.

Third Week: Democracy, Civilization and Energy

1/31 Session one: Freedom on Factory Planet.

Read: Zencey, Introduction (ix – xxix) and Chaps. 1 & 3 (pp. 1-18; 32-42: "The Other Road to Serfdom" and "What 'Sustainability' Is").

Recommended: Zencey, Chap. 2.

Discussion: Is "Growth Forever" compatible with democracy? What is sustainable?

2/2 Session two: additional perspective

Read: Hall et al., "What is the Minimum EROI a Sustainable Society Must Have?" and selections from Thomas Homer-Dixon, "The Upside of Down"

Discussion: EROI and civilizational collapse

Research assignment for next session: First do the reading/viewing assignment for 2/7. Then, research and prepare a brief (2 or 3 minute) presentation on the EROI of an energy system of your choice. (We'll try to avoid duplicates).

First graded essay due today

Fourth Week: Energy and Natural Capital

2/7 Session one: EROI and Peak Oil (Guest facilitator TBA)

Presentations: EROI research

View: Richard Heinberg, video, "300 Years of Fossil Fuels in 300 Seconds" at <https://www.youtube.com/watch?v=cJ-J91SwP8w> Read Costanza et al., encyclopedia article on EROI and Charles Hall, "Why EROI Matters," on the Oil Drum site at <http://www.theoil Drum.com/node/3786>

2/9 Session two: D and F Chaps 5, 6, Abiotic and Biotic Resources

Also: John Moir, "An Economist for Nature Calculates the Need for More Protection," The New York Times, August 8, 2011. (An article about the work of Gretchen Daily.) <http://www.nytimes.com/2011/08/09/science/09profile.html?pagewanted=all>
Recommended: Robert Costanza et al., "The value of the world's ecosystem services and natural capital," *Nature*, vol. 387, 15 May 1997
Recommended: the Millenium Ecosystem Assessment Report, "Ecosystems and Human Wellbeing: General Synthesis," available at <http://www.maweb.org/en/Synthesis.aspx>
And the "popularized" web version at <http://www.greenfacts.org/en/ecosystems/index.htm>

Fifth Week: Markets and Market Failures on Factory Planet

2/14 Session one: D and F, chap 7, 9 "From Empty World to Full World" and "Supply and Demand"

2/16 Session two: D and F, chaps 10, 11, 12 on Market Failures

Sixth Week: Wellbeing and Alternative Indicators

2/21 Session one: D and F, chaps. 13 & 14 "Human Behavior and Economics" and "Macroeconomic Concepts: GNP and Welfare." Also: EZ, 72-95 ("Getting over GDP")

2/23 Session two: Uru and Pennock, "The Gross National Happiness Survey Instrument"; Stiglitz, Sen & Fitoussi, "Report of the Commission on the Measurement of Economic Performance and Social Progress: Executive Summary" (about 18 pages). Max-Neef's matrix of human needs, TBA

Second Graded Paper assignment this week.

Seventh Week: Midterm and More

2/28 Session one: Midterm exam

3/2 Session two: Donella Meadows, "Leverage Points: Places to Intervene in a system"

Eighth Week Social capital

3/7 Session one: in class viewing of "The Power of Community," documentary about the Cuban experience of peak oil. Before class, read (take) the Social Capital Survey Research Instrument posted in Blackboard.

3/9 Session two: Robert Putnam, "Bowling Alone", *Journal of Democracy*, <http://xroads.virginia.edu/~HYPER/DETOC/assoc/bowling.html>; Garrett Hardin, "Tragedy of the Commons."

Recommended: World Bank, "What is Social Capital?"
<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTTSCIALCAPITAL/0,,contentMDK:20185164~menuPK:418217~pagePK:148956~piPK:216618~theSitePK:401015,00.html>

Spring Break

Ninth Week: Diagnosing Infinite Planet Thinking

3/21 Session one: D and F, chap.15, "Money"; EZ, 96-117 ("Industrial Civilization as a Pyramid Scheme," and "The Financial Crisis is the Environmental Crisis.")

3/23 Session two: Read: Zencey, 118 to 161 (EKC and Simon-Ehrlich Bet) Assignment: capture Infinite planet thinking in the field (hint: find a standard econ text) and bring in an exemplary paragraph of it for sharing and discussion.

Third Graded paper due this session

Final project milestone: preliminary thesis statement/problem solution pairing due

Tenth Week: Malthus and Macroeconomics

3/28 Session one: Malthus, Selections from "Essay on the Principle of Population"; additional material TBD

3/30 Session two: D and F, chap. 18 "International Trade"

Eleventh Week: Globalization, Trade and International Finance

4/4 Session one: instructor absent D and F, chap 19 "Globalization"

4/6 Session two: D and F, chap 20 "Financial Globalization"

Final Project Milestone: Refined topic, preliminary conceptual outline and annotated bibliography are due this session

Twelfth Week: The Governance Challenge

4/11 Session one: read D and F, chap. 21, "General Policy Design Principles"

4/13 Session two: Orr, "Governance in the Long Emergency"

Thirteenth Week: Scale, Justice

4/ 18 Session one: read D and F, chap 22, "Sustainable Scale," and "A Sustainable Scale Perspective: Setting Limits," from the website of *The Sustainable Scale Project*

<http://www.sustainable-scale.org/AttractiveSolutions/ASustainableScalePerspective.aspx>

Final Project Milestone: Detailed structural outline, first 3 paragraphs and writing plan due

4/ 20 Session two: D and F, chap 23, "Just Distribution;" also, Eddy Carder, "The Environmental Justice Movement," Internet Encyclopedia of Philosophy, sections 1, 2, and 4 at

<http://www.iep.utm.edu/enviro-j/>

Also, view the video of Joshua Farley, lecture/discussion on Just Distribution,

<http://www.postcarbon.org/video/371487-dr-joshua-farley-towards-a-just>

Recommended:

United Nations Universal Declaration of Human Rights

<http://www.un.org/en/documents/udhr/>

Fourteenth Week: The Big Transition

4/25 Session one: D and F chap. 24 and "Looking Ahead"; Zencey, "What Green Might Bring"

4/27 Session two: Portions of "The Transition Towns Primer," downloadable at <http://www.transitionnetwork.org/resources/transition-primer>

4/28 **Final Project due at 5:00**