

ECOLOGICAL ECONOMIC THEORY

Wednesdays, 2:35-5:35 PM

Gund Conference Room

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COURSE DESCRIPTION

Economics is frequently defined as the study of the allocation of scarce resources among alternative desirable ends, within and between generations: how we balance what is physically and ecologically possible with what is morally, socially and psychologically desirable. Economics should be based on the best available science from across the disciplines, but must ultimately be driven by normative values.

This course introduces ecological economics as a transdisciplinary field dedicated to solving pressing economic, social, and environmental problems. Ecological economics assesses the desirable ends of economic activity (a normative question), the nature of the available resources required to achieve those ends, existing institutions, and our knowledge of human behavior before deciding how to allocate. The most widely accepted desirable end in conventional economics is the satisfaction of subjective preferences through market allocation, which boils down to the maximization of monetary value. The desirable ends in ecological economics emphasize sustainability, justice, and a satisfactory quality of life for this and future generations of humans and other species. Ecological economics also differs from conventional economics in assuming that the economic system is embedded in a social system, which in turn is embedded in a finite global ecosystem. The economy is a physical system subject to the laws of both physics and ecology. The global ecological-economic system is highly complex adaptive system, non-linear and continually evolving. Simple answers to difficult questions rarely exist, and answers that were correct in the past may no longer be correct today.

The scientific method is based on falsification: one can never prove a theory to be true, but if empirical evidence contradicts a theory, then it can be proven false. Many ecological economists adhere to the philosophical tradition of pragmatism, which extends empirical testing to normative values. For example, many economists argue that individual choice (typically as expressed in the market) should drive all economic decisions, but ecological economists assert that this normative value should be tested in light of the results it generates. Pragmatism also holds that the goal of good theory to generate accurate predictions and acceptable solutions to real life problems rather than prioritizing an accurate representation of reality. We will use current events to 'test' both positive theory and normative values.

OBJECTIVES

1. Construct the pre-analytic vision of ecological economics
2. Formulate a whole systems approach to ecosystem structure and function.
3. Formulate a whole system approach to the human subsystem structure and function.

4. Evaluate and design policy tools based on ecological economic principles.
5. Explore possible future paths for ecological economics
6. Construct a web site to facilitate the teaching and learning of ecological economics
7. Develop peer mentoring relationships and connections to the Gund Institute learning community

ORGANIZATION and EVALUATION

The class is organized as a graduate student seminar, with weekly readings and discussion, group and individual presentations, and work on teaching/learning modules for an ecological economics website. The class is designed to be very interactive, with lots of good discussion, and depends entirely on your active engagement. When you fail to do the readings and come to class unprepared, you let down the entire class.

Each class will focus on a major theme in ecological economics. For each theme I have selected at least three articles, book chapters, or other readings with an emphasis on introducing you to leading ecological economists as well as important topics. During the portion of each class I will present the overall theme and lead discussion. During the second portion of class, one or two different students will present important papers on the week's topic (one each, or two jointly) and lead discussion; alternatively we will break up into groups by University to discuss the questions you previously provided. You can find a paper on your own, or present one of the recommended readings. E4A students should try to present material Two days prior to each class, all students will submit carefully thought out discussion points based on that week's readings. This means that all readings must be done in advance. I will select particularly good discussion points, and those students who submitted them will lead discussion for the final portion of the class (45 minutes - one hr.). Throughout the semester, I will expect students to keep up on current events, and integrate those relevant to the week's material into the discussions. We will treat current events as empirical tests of the theories presented.

Our major project will be to develop web based modules based on each class topic. Conventional economics textbooks typically have accompanying websites that provide professors with all the material needed to easily deliver a course, but there is little of this nature available in ecological economics. Student groups will therefore build detailed modules that provide reading materials, lecture notes and slide presentations, exercises and assignments, evaluation materials, and any other material required to effectively deliver a course or facilitate self-learning. Among other options, we could ask ecological economists from around the world to develop teaching modules based on their own work, perhaps a specific paper. We could design the site to allow users to review the modules and creators to modify the modules in response in an interactive peer review process. The International Society for Ecological Economics will host the website, which will likely be mirrored on the Gund site as well. I have draft modules for many topics that you can improve upon. There will be due dates for different components of the modules over the course of the semester. In lieu of any exams, you will be required to write an editorial relating course topics to current events, and submit it for publication. Those students who are published will receive an automatic 100%.

GRADING

UVM Students will be evaluated based on:

Overall class participation: Coming to class having done the readings and carefully thought about their implications for an ecological economy (10%)

Paper presentations: You will prepare a 15 minute presentation of a paper related to your module topic followed by an additional 15 minutes to discuss the reading (10%)

Discussion points submitted every class : Every week students will submit carefully thought out questions or comments designed to provoke discussion (15%)

Leading class discussion: A couple of times during the semester I will ask you to lead a discussion based on your discussion points (10%)

Editorials: You will write and submit a 700 word editorial relating course topics to important real world events (15%)

Final modules: Following a template that I will provide in by the 3rd week, you will produce a teaching module on one of the course topics (40%)

The courses will be listed separately at McGill and York, and the professors of record will likely do the grading. I will provide my comments on participation and presentations, but the McGill and York professors may grade somewhat differently.

EDUCATION IN THE ANTHROPOCENE

This class is part of the UVM-McGill-York Economics for the Anthropocene program and will therefore include students from all three universities. Basically, our goal is to create a transdisciplinary PhD program in ecological economics, broadly defined. Each year's cohort of students will focus on a specific transboundary ecological-economic problem. This year's cohort will focus on climate justice, which I will try to integrate into the readings and discussions. UVM students will meet in the Gund conference room, and McGill and York students in a room on their own campuses connected via interactive video networking. One challenge is that McGill, UVM and York have slightly different schedules, so a couple of classes will be asynchronous.

CERTIFICATE of GRADUATE STUDY in ECOLOGICAL ECONOMICS

For UVM students, this course serves as a gateway to the Certificate of Graduate Study in Ecological Economics. The EE Certificate is a 15-credit program, including 3 core classes and 2 electives. The core classes include this theory course, plus Ecological Economic Methods (previously Dynamic Systems Modeling) and Ecological Economic Practice (also known as Gund ateliers). Candidates for the EE Certificate also have to demonstrate graduate-level experience across four competencies in natural sciences, social sciences, management, and quantitative methods. This can be done with courses (usually at least the 2 electives are used), but also previous graduate classes and life experience. Note that the Graduate College will only allow 6 credits to be transferred into the 15-credit program (including earned or currently enrolled UVM credits). Admission into the EE Certificate program is separate from admission into an MS or PhD program at UVM, requiring an additional (short) application.

ACADEMIC INTEGRITY

Any breach of the Code of Academic Integrity will be considered grounds for failure in the course. See: <http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf>. Collaboration on homework and course projects is required; however everyone is expected to be an equal partner. Copying or free-riding on the sweat of others will be considered grounds for individually failing assignments and/or the class.

USEFUL SOURCES

[Center for the Advancement of the Steady State Economy](#) (CASSE)

[Ecological Economics Journal](#)

<http://www.euroecolecon.org/publications/>

[Post-carbon Institute](#)

[Real World Economic Review](#)

DRAFT COURSE OUTLINE (Project MILESTONES will be added)

Jan. 20	Course intro	<p>Daly, H. E. (1968). On Economics as a Life Science. Journal of Political Economy, 76(3), 392-406</p> <p>Costanza, R., 1989. What is ecological economics? Ecological Economics 1, 1-7.</p> <p>Faber, M., 2008. How to be an ecological economist. Ecological Economics 66, 1-7.</p> <p>Recommended:</p> <p>Ropke, I., 2004. The early history of modern ecological economics. Ecological Economics 50, 293-314.</p> <p>Ropke, I., 2005. Trends in the development of ecological economics from the late 1980s to the early 2000s. Ecological Economics 55, 262-290.</p>
Jan. 27	Pre-analytic vision and goals	<p>Costanza, R., Daly, H.E., Bartholomew, J.A., 1991. Goals, agenda, and policy recommendations for ecological economics, in: Costanza, R. (Ed.), Ecological Economics: The Science And Management Of Sustainability. Columbia University Press, New York, pp. 1-20</p> <p>Daly, H.E., 1992. Allocation, distribution, and scale: towards an economics that is efficient, just, and sustainable. Ecological Economics 6, 185-193.</p> <p>Gowdy, J., & Erickson, J. (2005). The approach of ecological economics. Cambridge Journal of Economics, 29(2), 207-222.</p> <p>Recommended:</p>
Feb. 3	Resource base and Thermodynamics	<p>Georgescu-Roegen, N., 1975. Energy and Economic Myths. Southern Economic Journal 41, 347-381</p> <p>Norgaard, R.B., 2010. Ecosystem services: From eye-opening metaphor to complexity blinder. Ecological Economics 69, 1219-1227.</p> <p>Steffen, W., Grinevald, J., Crutzen, P., McNeill, J., 2011. The Anthropocene: conceptual and historical perspectives. Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences 369, 842-867</p> <p>Recommended:</p> <p>Hubbert, M.K., 1993. Exponential Growth as a Transient Phenomena in Human History, in: Daly, H., Townsend, K. (Eds.), Valuing the Earth: Economics, Ecology, Ethics. MIT Press, Cambridge, pp. 113-125.</p> <p>Rockstrom, J., et al. 2009. A safe operating space for humanity. Nature 461, 472-475.</p>
Feb. 10	Human nature	<p>Rees, W., 2016. Denying Herman Daly: Why Conventional Economics Will not Embrace the Daly Vision, in: Farley, J., Malghan, D. (Eds.), Beyond uneconomic growth. Edward Elgar</p> <p>Gintis, H., 2000. Beyond Homo economicus: evidence from experimental economics. Ecological Economics 35, 311-322.</p>

		<p>Vohs, K.D., Mead, N.L., Goode, M.R., 2006. The Psychological Consequences of Money. Science 314, 1154-1156.</p> <p>Recommended:</p> <p>Bauman Y, Rose E. Selection or indoctrination: Why do economics students donate less than the rest? Journal of Economic Behavior & Organization. 2011;79(3):318-327</p> <p>Frank RH, Gilovich T, Regan DT. Does Studying Economics Inhibit Cooperation? Journal of Economic Perspectives. 1993;7(2):159-171</p> <p>Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., McElreath, R., Alvard, M., Barr, A., Ensminger, J., Henrich, N.S., Hill, K., Gil-White, F., Gurven, M., Marlowe, F.W., Patton, J.Q., Tracer, D., 2005. "Economic man" in cross-cultural perspective: Behavioral experiments in 15 small-scale societies. Behavioral and Brain Sciences 28, 795-855.</p> <p>Gowdy, J.M., 2004. Altruism, evolution, and welfare economics. Journal of Economic Behavior & Organization 53, 69-73.</p> <p>Caruso, Eugene M.; Vohs, Kathleen D.; Baxter, Brittani; Waytz, Adam. Mere exposure to money increases endorsement of free-market systems and social inequality. Journal of Experimental Psychology: General, Vol 142(2), May 2013, 301-306</p> <p>Kouchaki, M., Smith-Crowe, K., Brief, A.P., Sousa, C., 2013. Seeing green: Mere exposure to money triggers a business decision frame and unethical outcomes. Organ. Behav. Hum. Decis. Process. 121, 53-61.</p>
Feb. 17	<p>Microeconomics:</p> <p>What is efficiency?</p>	<p>Bromley, D.W., "The Ideology of Efficiency: Searching for a Theory of Policy Analysis," Journal of Environmental Economics and Management 19: 86-107, 1990.</p> <p>Stigler, G.J., Becker, G.S., 1977. De Gustibus Non Est Disputandum. The American Economic Review 67, 76-90. (Requires access to JSTOR; also in Dropbox).</p> <p>Farley, J., Schmitt Filho, A., Burke, M., Farr, M., 2015. Extending market allocation to ecosystem services: Moral and practical implications on a full and unequal planet. Ecological Economics 117, 244-252.</p> <p>Recommended:</p> <p>Gowdy, J.M., <i>Microeconomic Theory Old and New: a Student's Guide</i>, Stanford University Press, Stanford, CA, 2010, Chapters 1-4</p> <p>Daly, H., 1974. Steady-state economics versus growthmania: A critique of the orthodox conceptions of growth, wants, scarcity, and efficiency. Policy Sci 5, 149-167.</p>
Feb. 24	<p>Microeconomics:</p> <p>'market failures'</p>	<p>Gowdy, J.M., Microeconomic Theory Old and New: a Student's Guide, Stanford University Press, Stanford, CA, 2010, chapter 5</p>

		<p>Farley, J., 2010. Conservation Through the Economics Lens. Environmental Management 45, 26-38.</p> <p>van den Bergh, J.C.J.M., 2010. Externality or sustainability economics? Ecological Economics 69, 2047-2052.</p> <p>Recommended:</p> <p>Farnsworth, E., Tidrick, T.H., Smathers, W.M., Jorda, C.F., 1983. A synthesis of ecological and economic theory toward a more complete valuation of tropical moist forests. International Journal of Environmental Studies 21, 11–28. (also in Dropbox)</p> <p>Randall, A., 1993. The Problem of Market Failure, in: Dorfman, R., Dorfman, N. (Eds.), Economics of the Environment, 3rd ed. . Norton, New York, pp. 144–161.</p>
Mar. 2	Microeconomics: The valuation debate	<p>Martinez-Alier, J., Munda, G., O'Neill, J., 1998. Weak comparability of values as a foundation for ecological economics. Ecological Economics 26, 277-286.</p> <p>Gowdy, J., 1997. The Value of Biodiversity: Markets, Society and Ecosystems. Land Economics, 25-41.</p> <p>Costanza, R., d'Arge, R., Groot, R. d., Farber, S., Grasso, M., Hannon, B., . . . Belt, M. v. d. (1997). The value of the world's ecosystem services and natural capital. Nature(387), 253-260.</p> <p>Recommended:</p> <p>Spash, C.L., 2008. How much is that ecosystem in the window? The one with the biodiverse trail. Environmental Values 17, 259-284.</p> <p>Farley, J., 2008. The Role of Prices in Conserving Critical Natural Capital. Conservation Biology 22, 1399-1408.</p>
Mar. 16	Macroeconomics: goals and measurements; the steady state	<p>Daly, H.E., "Introduction to the Steady-State Economy," in H.E. Daly (ed.), <i>Economy, Ecology, Ethics: Essays Toward a Steady-State Economy</i>, W.H. Freeman and Co., San Francisco, CA, 1980.</p> <p>Bergh, J. C. J. M. v. d. (2009). "The GDP paradox." Journal of Economic Psychology 30(2): 117-135.</p> <p>Victor, P. (2009). "Living Well: Explorations into the End of Growth." Center for Humans and Nature 5(2).</p> <p>Recommended:</p> <p>Costanza, R., J. Erickson, K. Fliigger, A. Adams, C. Adams, B. Altschuler, S. Balter, B. Fisher, J. Hike, J. Kelly, T. Kerr, M. McCauley, K. Montone, M. Rauch, K. Schmiedeskamp, D. Saxton, L. Sparacino, W. Tusinski and L. Williams (2004). "Estimates of the Genuine Progress Indicator (GPI) for Vermont, Chittenden County and Burlington, from 1950 to 2000." Ecological Economics 51(1-2): 139-155.</p>

		<p>Center for the Advancement of the Steady State Economy (CASSE). See articles by Brian Czech, among others.</p> <p>Stiglitz, J. E., A. Sen, J.-P. Fitoussi and et al. (2009). Full report "Report by the Commission on the Measurement of Economic Performance and Social Progress." or Summary</p> <p>Daly, H., 2013. A further critique of growth economics. <i>Ecological Economics</i> 88, 20-24.</p>
Mar. 23	Macroeconomics: Money, finance and speculation	<p>Farley, J., Burke, M., Flomenhoft, G., Kelly, B., Murray, D.F., Posner, S., Putnam, M., Scanlan, A., Witham, A., 2013. Monetary and Fiscal Policies for a Finite Planet. <i>Sustainability</i> 5, 2802-2826.</p> <p>Real Economic Review issue 64 - 2 July 2013 4 short articles Is it a bubble? 2 Steve Keen - A bubble so big we can't even see it 3 Dean Baker - Are the bubbles back? 11 Ann Pettifor - The next crisis 15 Michael Hudson - From the bubble economy to 21</p> <p>Lawn, P., 2010. Facilitating the transition to a steady-state economy: Some macroeconomic fundamentals. <i>Ecological Economics</i> 69, 931-936.</p> <p>Recommended: Lietaer, B., Arnsperger, C., Goerner, S., Brunnhuber, S., 2012. Money and Sustainability –The Missing Link. Triarchy Press, Axminster. (executive summary)</p>
Mar. 30	Macroeconomics: Distribution	<p>OXFAM, 2016. AN ECONOMY FOR THE 1%: How privilege and power in the economy drive extreme inequality and how this can be stopped, Briefing papers. OXFAM.</p> <p>Piketty, T., 2014. Capital in the 21st century, Harvard University Press. Chapter 16: The Public Debt & Conclusions</p> <p>Becker, G.S., Murphy, K.M., 2007. The Upside of Income Inequality. <i>The American</i>, 1-5.</p> <p>Recommended: Howarth, R.B. 2011. "Intergenerational Justice." <i>In the Oxford Handbook on Climate Change and Society</i> (John S. Dryzek, Richard B. Norgaard, and D. Schlosberg, editors). Oxford: Oxford University Press.</p> <p>CLASS, 2010? Why Inequality Matters. http://classonline.org.uk/docs/Why_Inequality_Matters.pdf.</p> <p>Saez, E., 2013. Striking it Richer: The Evolution of Top Incomes in the United States (Updated with 2011 estimates), University of California-Berkley working Paper, University of California, Berkley. Available on-line: http://emlab.berkeley.edu/~saez/saez-UStopincomes-2011.pdf. Accessed July 27, 2013.</p>

		Wilkinson, R., Pickett, K., 2009. <i>The Spirit Level: Why Greater Equality Makes Societies Stronger</i> . Bloomsbury Press, New York.
April 6	Macroeconomics: International trade and financial contagion	<p>Minsky, H. P. (1992, May). The financial instability hypothesis. The Jerome Levy Economics Institute of Bard College (Working Paper 74).</p> <p>Presenti, P. A., & Tille, C. (2000, September). The economics of currency crises and contagion: An introduction. <i>Economic Policy Review</i>, 6, (3).</p> <p>Daly, H., Goodland, R., 1994. An ecological-economic assessment of deregulation of international commerce under GATT. <i>Ecological Economics</i> 9, 73-92.</p> <p>Recommended</p> <p>Muradian, R., Martinez-Alier, J., 2001. Trade and the environment: from a 'Southern' perspective. <i>Ecological Economics</i> 36, 281-297.</p>
April 13	Policy design	<p>Chapter 21 in Daly, H. E. and J. Farley (2010). <i>Ecological Economics: Principles and Applications</i>. Washington, DC, Island Press.</p> <p>Fisher, B., Turner, K., Zylstra, M., Brouwer, R., Groot, R.d., Farber, S., Ferraro, P., Green, R., Hadley, D., Harlow, J., Jefferiss, P., Kirkby, C., Morling, P., Mowatt, S., Naidoo, R., Paavola, J., Strassburg, B., Yu, D., Balmford, A., 2008. Ecosystem Services and Economic Theory: Integration for Policy-Relevant Research. <i>Ecological Applications</i> 18, 2050–2067.</p> <p>Vatn, A. (2010). "An institutional analysis of payments for environmental services." <i>Ecological Economics</i> 69(6): 1245-1252.</p> <p>Recommended:</p> <p>Costanza, R., F. Andrade, P. Antunes, M. v. d. Belt, D. Boersma, D. F. Boesch, F. Catarino, S. Hanna, K. Limburg, B. Low, M. Molitor, G. Pereira, S. Rayner, R. Santos, J. Wilson and M. Young (1998). "Principles for sustainable governance of the oceans." <i>Science</i> 281(198-199).</p>
April 20	Policy applications	<p>Zia, A., Hirsch, P., Songorwa, A., Mutekanga, D.R., O'Connor, S., McShane, T., Brosius, P., Norton, B., 2011. Cross-Scale Value Trade-Offs in Managing Social-Ecological Systems: The Politics of Scale in Ruaha National Park, Tanzania. <i>Ecology and Society</i> 16. (also copy in dropbox)</p> <p>Farley, J., Costanza, R., Flomenhoft, G., Kirk, D., 2015. The Vermont Common Assets Trust: An institution for sustainable, just and efficient resource allocation. <i>Ecological Economics</i> 109, 71-79.</p> <p>Recommended:</p> <p>Farley, J., 2012. Ecosystem Services: The Economics Debate. <i>Ecosystem Services</i> 1, 40-49. (Note that there is some overlap between this article and the one I co-authored for the efficiency module.)</p> <p>Chapters 22-24 in Daly, H. E. and J. Farley (2010). <i>Ecological Economics: Principles and Applications</i>. Washington, DC, Island Press are also useful.</p>

April 27	Future of EE	<p>Brown, P., 2016. The Unfinished Journey of Ecological Economics: Toward an Ethic of Ecological Citizenship, in: Farley, J., Malghan, D. (Eds.), Beyond uneconomic growth. Edward Elgar, London</p> <p>Spash, C.L., 2013. The shallow or the deep ecological economics movement? Ecological Economics 93, 351-362.</p> <p>Recommended:</p> <p>Spash, C.L., 2012. New foundations for ecological economics. Ecological Economics 77, 36-47.</p>
May 4	Future of the Planet + Summary and conclusions	<p>I was originally planning to have people briefly present their modules, but on consideration, I thought there may be inadequate time. Instead, I thought it would be interesting to discuss the biggest threats currently faced by society, and the potential for ecological economics to help address them.</p> <p>Costanza, R. 2000. Visions of alternative (unpredictable) futures and their use in policy analysis. Conservation Ecology 4(1): 5. [online] URL: http://www.consecol.org/vol4/iss1/art5/</p> <p>Randle, M., Eckersley, R., 2015. Public perceptions of future threats to humanity and different societal responses: A cross-national study. Futures 72, 4-16.</p> <p>Recommended: Executive summary of Stuart Armstrong, Future of Humanity Institute, Oxford University, and Dennis Pamlin, Executive Project Manager, Global Risks (2015) 12 Risks that threaten human civilisation.</p>

Curiously, many conventional economists argue that economics is a positive science, while ‘desirable ends’ implies normative goals. They therefore argue that ends need not be desirable per se, and that the economy should try to satisfy individual preferences (weighted by purchasing power) regardless of the desirability of the consequences. However, this libertarian assumption merely defines ‘desirable’ as whatever the consumer prefers.