Foundations of Ecological Economics 2015/2016

Code: 42407
ECTS Credits: 9

Degree	Type	Year	Semester
4313784 Interdisciplinary Studies in Environmental, Economic and Social Sustainability	OT	0	1

Contact

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Use of languages

Principal working language: english (eng)

Teachers

Pere Riera Micaló

Jeroen Van Den Bergh

Prerequisites

If not native English speaker: valid IELTS (with a minimum score of 6.5) or TOEFL (minimum 550 paper based, 213 computer based, 79 web-based) score report or a Cambridge Certificate of Proficiency in English or Cambridge Certificate in Advanced English. Students should preferably hold an undergraduate degree with relevance to environmental or ecological economics, although students taught in geography, ecology, political science are also welcome and should in principle be able to follow the course.

Objectives and Contextualisation

The course will introduce the field of ecological economics, paying attention to theoretical, methodological and empirical issues. Classic themes, important debates and recent research foci will receive attention.

At the end of the course the student is expected to have a good understanding of:

- The main themes, theories and methods addressed by ecological economics;
- The basic literature regarding ecological economics;
- The essential differences between the way environmental problems and solutions are approached in environmental economics and ecological economics;
- New methods that have been proposed by, and are applied within, ecological economics.

Skills

- Apply knowledge of environmental and ecological economics to the analysis and interpretation of environmental problem areas.
- Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
- Communicate orally and in writing in English.
- Continue the learning process, to a large extent autonomously
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.

- Work in an international, multidisciplinary context.

Learning outcomes

1. Adopt a holistic perspective on the relationship between the economy and biophysical systems.
2. Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
3. Communicate orally and in writing in English.
4. Continue the learning process, to a large extent autonomously
5. Differentiate between the approaches to environmental problems of environmental and ecological economics.
6. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
7. Know the role of the institutions in environmental governance.
8. Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.
9. Work in an international, multidisciplinary context.

Content

The FEE course involves a series of 3-hour lectures organised in four main sub-modules under the responsibility of specific teachers. Some lectures may involve video-discussions and role-play exercises.

Sub-Module 1: Foundations, Policy & Innovation (JvdB)

History and principles of ecological economics (20th Oct)
Welfare, markets, externalities and public goods (22nd Oct)
Environmental policy instruments (27th Oct)
Theories and methods of environmental valuation (29th Oct)
Economics of climate policy (3rd Nov)
The ecological footprint and spatial sustainability (5th Nov)
Behavioural economics and environmental policy (10th Nov)

Sub-Module 2: Valuation (PR)

Social cost-benefit and multi-criteria analysis (12th Nov)
Revealed preference valuation methods (17th Nov)
Stated preference valuation methods (19th Nov)

Essay writing and Reading session - with EC (24th Nov)

Sub-Module 3: Institutional Aspects (EC)

Institutional economics and environmental governance (26th Nov)
Property and access theory (1st Dec)
Institutional fit, interplay and scale (3rd Dec)

Sub-Module 4: Ecosystem Services Issues, Policies and Challenges (EC)

Commodification of ecosystem services (10th Dec)
Payments for ecosystem services and environmental offsets (11th Dec)
REDD+ (15th Dec)
The environment-versus-growth debate (17th Dec)

Methodology

Lecturers will present a given topic and students will be expected to prepare for the class reading in advance, and at least, the compulsory readings suggested in the bibliography. Lectures will involve time for questions and answers and for discussion; they might also involve role-play exercises and video-material. Presentation and essays preparation will involve group and individual work, respectively.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Lectures	54	2.16	6, 4
Presentation and discussion in class	8	0.32	3, 2, 6, 4, 9
Type: Autonomous			
Reading articles, books and studying for each of the given lectures and the final exam	100	4	7, 1, 5, 6, 4, 9
1 short and 2 longer essays, which involve reading the necessary literature to write the essays	60	2.4	8, 6, 4, 9

Evaluation

Students will be assessed on the basis of (a) a written, closed-book exam; b) written essays, and c) their participation in class. In particular, they will be assessed based on:

- Presence and participation in lectures: at least 75-80% of all lectures; absence should be justified.

- A final exam, contributing to 50% of the final mark. The exam will take place on the 12th January 2015, from 10 to 13:00 hours. It will cover aspects of each module of the course. Students will have limited space to answer each of these questions and will have to show that they have understood and mastered key concepts and ideas introduced during the course. The contributing teachers will evaluate the exam together.

- Three written essays:

Essay 1) A 1000-words essay: "Use evidence from the peer-reviewed and grey literature to explain why carbon markets have either contributed or failed to reduce greenhouse gas emissions, and what could be done to improve their contribution to combatting climate change", to be submitted by 3rd December 2015, and contributing to 15% of the final mark;

Essay 2) A 1500-words essay: Discuss the following statement: "REDD+ national strategies and projects have potential to realise environmental justice at global, national and local scale", to be submitted by 12th January 2016, and contributing to 25% of the final mark;

Essay 3) A 500-words personal statement corresponding to the last lecture of the course, focused on the environment-versus-growth debate, and to be submitted by 17th December, contributing to 10% of thefinal mark.

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Final exam	50%	3	0.12	8, 3, 2, 6, 4, 9

1 short and 2 longer essays	50%	0	0	8, 3, 6, 9

Bibliography

The literature marked with (*) is compulsory and must be read prior to each lecture since it will be the basis for the respective class and ensuing discussion. The other literature mentioned is background reading that students are encouraged to read and prepare for the exam. The student should source all articles through the website and academic library sources (e.g. Scopus, Web of Knowledge), all available on the UAB campus.

1. History and principles of Ecological Economics (20th Oct)

(*) van den Bergh, J.C.J.M. 2000. Ecological Economics: Themes, Approaches, and Differences with Environmental Economics. *Regional Environmental Change*, 3(1): 13-23.

Martinez-Alier, J., Roca Jusmet, J. 2000. Economía Ecológica y Política Ambiental. PNUMA y Fondo de Cultura Económica.

Ropke, I. 2005. Trends in the development of ecological economics from the late 1980s to the early 2000s. *Ecological Economics*, 55: 262- 290.

2. Welfare, markets, externalities and public goods (22nd Oct)

(*) Kahn, J.R. 2004. *The Economic Approach to Environmental and Natural Resources*. 3rd edition, Thomson/South-Western, Fort Worth, Mason, Ohio. ch. 2; & ch. 4, section "What is Value".

(*) Verhoef, E.T. 1999. Externalities. Chapter 13 in: J.C. J.M. van den Bergh (ed.). *Handbook of Environmental and Resource Economics*. Edward Elgar, Cheltenham, pp. 197-214.

3. Environmental policy instruments (27th Oct)

(*) Russell, C.S., Powell, P.T. 1999. Practical considerations and comparison of instruments of environmental policy. Chapter 21 in: J.C.J.M. van den Bergh (ed.). *Handbook of Environmental and Resource Economics*. Edward Elgar, Cheltenham, pp. 307-328.

Sterner, T. 2003. *Policy Instruments for Environmental and Natural Resource Management.* Resources for the Future (RFF Press), WashingtonD.C., USA, 504 pages.

4. Theories and methods of environmental valuation (29th Oct)

(*) Perman et al., Valuing the Environment, Chapter 4 in *Natural Resource and Environmental Economics*

Hanley, N., Spash, C.L. 1993. Cost-Benefit Analysis and the Environment. Edward Elgar Publishers, Aldershot.

Martinez-Alier, J., Munda, J., O'Neill, J. 1998. Weak comparability of values as a foundation for ecological economics. Ecological Economics, 26: 277-286.

5. Economics of climate policy (3rd Nov)

(*) Executive summary of The Stern review: *The Economics of Climate Change* (2006). http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/30_10_06_exec_sum.pdf

(*) McKibbin, W.J., Wilcoxen, P.J. 2002. The role of economics in climate change policy. *Journal of Economic Perspectives* 16(2): 107-129.

J.C.J.M. van den Bergh (2010). Safe climate policy is affordable - 12 reasons. *Climatic Change* 101(3): 339-385.

Responses to / debate on the Stern review (http://www.hm-treasury.gov.uk/6520.htm).

Tol, R.S.J. (2009). The economic effects of climate change. *Journal of Economic Perspectives* 23(2): 29-51.

Closing conference by invited speaker / speSESS YOUR SUB-MODULE.S, AND A MAXIMUM OF 10. MARK WITH A DOUBLE ** THOSE THAT YOU CO

6. The ecological footprint and spatial sustainability (5th Nov)

(*) J.C.J.M. van den Bergh and F. Grazi (2014). Footprint Policy? Land Use as an Environmental Indicator. Journal of Industrial Ecology 18(1): 10-19.

with response by Wackernagel in the journal and on the web, and replies by van den Bergh/Grazi in same journal and journal *Ecological Indicators* (2015).

Grazi, F.; van den Bergh, J. and P. Rietveld .2007.Spatial welfare economics versus ecological footprint: Modeling agglomeration, externalities and trade. *Environmental and Resource Economics* 38: 135-153.

7. Behavioral economics and environmental policy (10th Nov)

(*) E. Gsottbauer and J.C.J.M. van den Bergh (2011). Environmental policy theory given bounded rationality and other-regarding preferences. *Environmental and Resource Economics* 49(2): 263-304.

8. Social cost-benefit and multi-criteria analysis (12th Nov)

(*) Boardman, Anthony E., David H. Greenberg, Aidan R. Vining, and David L. Weimer (2011), Cost-Benefit Analysis: Concepts and Practice. Fourth Edition, Pearson (Prentice Hall), Upper Saddle River, NJ.

Arrow, Kenneth, Maureen Cropper, George Eads, Robert Hahn, Lester Lave, Roger Noll, Paul Portney, Milton Russell, Richard Schmalensee, Kerry Smith, and Robert Stavins (1996), Is There a Role for Benefit-Cost Analysis in Environmental, Health, and Safety Regulation? Science 272(5259): 221-222.

Gramlich, Edward M. (1998), A Guide to Benefit-Cost Analysis, 2nd edition, Waveland Press.

U.S. Environmental Protection Agency (2000), Guidelines for Preparing Economic Analyses. Washington, D.C: U.S. Environmental Protection Agency.

9. Revealed preference valuation methods (17th Nov)

(*) Hotelling, Harold (1947) "The Economics of Public Recreation." In The Prewitt Report. Department of the Interior, Washington, D.C.

(*) Riera, Pere and Giovanni Signorello (eds.) (2012) Good practice guidelines for the non-market valuation of forest goods and services. University of Catania, Catania, Italy: DiGeSA.

Hanemann, W. Michael (2006) The Economic Conception of Water, In P. P. Roges, M. R. Llamas, and L. Martinez-Cortina (eds.) Water Crisis: Myth or Reality? Taylor & Francisplc., London.

10. Stated preference valuation methods (19th Nov)

(*) Arrow,Kenneth, Robert Solow, Paul R.Portney, Edward E. Leamer, Roy Radner, and Howard Schuman (1993), Report of the NOAA Panel on Contingent Valuation Federal Register, US Department of Commerce, 58(10): 4601-4614.

(*) Riera, Pere and Giovanni Signorello (eds.) (2012) Good practice guidelines for the non-market valuation of forest goods and services. University of Catania, Catania, Italy: DiGeSA.

Hanemann, W. Michael, Barbara Kanninen (1998) *The Statistical Analysis of Discrete-Response CV Data*. Working Paper 798, Department of Agriculture and Resource Economics and Policy, University of California at Berkeley

11. Essay writing & Reading class (24th Nov)

This lecture will be dedicated to learn about essay/scientific article writing and to start planning the contents of the first 1000-words essay of the course.

12. Institutional economics and environmental governance (26th Nov)

(*) Biermann, F. 2007. 'Earth system governance' as a crosscutting theme of global change research. *Global Environmental Change*, 17: 326-337.

(*) Aguilera-Klink, F. 1994. Some notes on the misuse of classic writings in economics on the subject of common property. *Ecological Economics*, 9(3): 221-228.

Dietz et al. 2003. The struggle to govern the commons. *Science*, 302(1907).

Feeny, D., Berkes, F., McCay, B.J. y J.M. Atcheson, 1990. The tragedy of the commons - 22 years later. *Human Ecology*. 18: 1-19.

Hardin, G. 1968. The tragedy of the commons. *Science*, 162: 1243-1248.

Ostrom E, Schlager E, 1996. "The formation of property rights", in Rights to Nature. Ecological, Economic, Cultural and Political Principles of Institutions for the Environment Eds S Hanna, C Folkem, K G Maler (Island Press,Washington, DC) pp 127-156.

Ostrom, E. 1990. *Governing the Commons: The Evolution of for Collective Action*. Cambridge University Press, Cambridge.

Ostrom, E. et al. (eds) 2002. The Drama of the Commons. Washington, National Research Council.

Ostrom, E., 2005. Understanding Institutional Diversity. Princeton University Press, Princeton & Woodstock.

Vatn, A., 2005. *Institutions and the Environment*. Edward Elgar, Cheltenham, UK and Northampton, USA.

13. Property and Access Theory (1st Dec)

(*) Ribot, J., Peluso, N. 2003. A Theory of Access. *Rural Sociology*, 68(2): 153-181.

(*) Schlager, E. and E. Ostrom, E. 1992. Property-Rights Regimes and Natural Resources: A Conceptual Analysis. *Land Economics*, 68(3): 249-262

Corbera, E., Brown, K., Adger, W.N. 2007. The equity and legitimacy of markets for ecosystem services. *Development and Change* 38(4): 587-613.

Sikor T., Lund C., 2009. Access and property: a question of power and authority. *Development and Change*, 40(1): 1-22.

Sikor, T. (ed) 2008. Public and Private in Natural Resource Governance. A False Dichotomy? London, Earthscan.

von Benda-Beckmann F, von Benda-Beckmann K, Wiber M, 2006. "The properties of property", in *Changing Properties of Property* Eds F von Benda-Beckmann, Kvon Benda-Beckmann, M Wiber (Berghahn, New York).

14. Institutions: design, fit, interplay and scale (3rd Dec)

(*) Cumming, G.S. et al. 2013. Resilience, experimentation, and scale mismatches in social-ecological landscapes. *Landscape Ecology*, 28:1139-1150

(*) Reischl, G., 2012. Designing institutions for governing planetary boundaries - Lessons from global forest governance. *Ecological Economics*, 81: 33-40.

Basurto, X. and Coleman, E., 2010. Institutional and ecological interplayfor successful self-governance of community-based fisheries. *Ecological Economics*, 69(5): 1094-1103

Corbera, E., Brown, K., 2008. Offsetting benefits? Analysing access to forestcarbon. *World Development*, 36(10): 1956-1979.

Galaz, V., et al. 2012. 'Planetary boundaries' - exploring the challenges for global environmental governance. *Current Opinion in Environmental Sustainability*, 4 (1): 80-87.

Gómez-Baggethun, E., Kelemen, E., Martín, B., Palomo, I., Montes, C., 2013. Scale misfit in ecosystem service governance as a source of environmental conflict. *Society & Natural Resources*, 26: 1202-1216.

Wyborn, C. and Bixler, R.P., 2013. Collaboration and nested environmental governance: Scale dependency, scale framing, and cross-scale interactions in collaborative conservation. *Journal of Environmental Management*, 123: 58-67.

Young, O.R., 2002. The Institutional Dimensions of Environmental Change. Fit, Interplay and Scale. MIT Press, London.

15. Commodification of ecosystem services (10th Dec)

(*) Gómez-Baggethun, E., Ruiz-Pérez, M. 2011. Economic valuation and the commodification of ecosystem services. *Progress in Physical Geography,* 35: 617 - 632.

(*) Kosoy, N., Corbera, E. 2010. Payments for ecosystem services as commodity fetishism. *Ecological Economics,* 69: 1228-1236.

Luck, G.W., Chan, K.M.A., Eser, U., Gómez-Baggethun, E., Matzdorf, Norton, B., Potschin, M.B. 2012. Ethical Considerations in On-ground Applications of the Ecosystem Services Concept. *BioScience*, 62: 1020-1029.

Jax, K., Barton, D.N., Chan, K., de Groot, R., Doyle, U., Eser, U., Görg, C., Gómez-Baggethun, E., Haber, W., et al. 2013. Ecosystem services and ethics. *Ecological Economics*, 93: 260-268.

Marx, K. The commodity. In: Capital, Chapter 1. Read speciallysections 1 (The Two Factors of the Commodity) and 4 (The Fetishism of the Commodity and Its Secret).

Polanyi, K. 2001. The Self-regulating Market and the Fictitious Commodities: Labor, Land, and Money.Chapter 6 in: The great transformation: The political and economic origins of our time. Boston: Beacon Press.

16. Payments for Ecosystem Services (11th Dec)

(*) Muradian, R., Corbera, E., Pascual, U., Kosoy, N., May, P. 2010. Reconciling theory and practice: An alternative conceptual framework for understanding payments for environmental services. *Ecological Economics*, 69: 1202-1208. [worth looking at the whole special issue]

(*) Calvet-Mir, L., Corbera, E., Martin, A., Gross-Camp, N. and Fisher, J. 2015. Payments for Ecosystem Services in tropical and sub-tropical regions: a closer look at effectiveness and equity. *Current Opinion in Environmental Sustainability*, 14: 150-162.

Brouwer R, Tesfaye A, Pauw P., 2012. Meta-analysis of institutional economic factors explaining the environmental performance of payments for watershed services. *Environmental Conservation*, 38: 380-392.

Corbera, E. 2015. Valuing nature, paying for ecosystem services and realizing social justice: A response to Matulis. *Ecological Economics*, 110: 154-157.

Corbera, E., Brown, K. 2010. Offsetting benefits? Analysing access to forest carbon. *Environment and Planning A*, 42(7): 1739-1761.

Corbera, E., Soberanis, C., & Brown, K. (2009) Institutional dimensions of payments for ecosystem services. An analysis of Mexico's carbon forestry programme. *Ecological Economics*,68: 743-761.

Martin-Ortega J, Ojea E, Roux C: Payments for water ecosystem services in Latin America: a literature review and conceptual model. *Ecosystem Services*, 6: 122-132.

Muradian et al., 2013. Payments for ecosystem services and the fatal attraction of win-winsolutions. *Conservation Letters*, 6(4): 274-279.

Pascual, U., Phelps, J., Garmendia, E., Brown, K., Corbera, E., Martin, A., Muradian, R.and Gómez-Baggethun, E. 2014. Social equity matters in Payments for Ecosystem Services*. Bioscience*, 64(11): 1027-1036.

Pattanayak, S., Wunder, S. & Ferraro, P., 2010 Show me the money: do payments supply environmental services in developing countries? *Rev. Env. Econ. Pol.* 4: 254-274.

Vatn, A., 2010 An institutional analysis of payments for environmental services. *Ecological Economics*, 69: 1245-1256.

17. REDD+ and environmental offsets (15th Dec)

(*) Corbera, E., 2012. Problematizing REDD+ as an experiment in payments for ecosystem services. Current Opinion in Environmental Sustainability, 4, 612-619.

(*) Naughton-Treves, L., Wendland, K. 2014. Land Tenure and Tropical Forest Carbon Management. World Development, 55:1-6 [worth having a look at the whole special issue]

Angelsen, A. 2014. The economics of REDD+. *In:* Kant, S. & Alavalapati, J. (eds.) *Handbook in forest economics.* Routhledge.

Beymer-Farris BA, Bassett TJ., 2012. The REDD menace: resurgent protectionism in Tanzania's mangrove forests. *Global Environmental Change*, 22: 332-341.

Bumpus A, Liverman D., 2008. Accumulation by decarbonization and the governance of carbon offsets. *Economic Geography*, 84: 127-155.

Liverman D., 2004. Who governs, at what scale and at what price? Geography, environmental governance, and the commodification of nature. *Annals of theAssociationof American Geographers*, 94: 734-738.

Lohmann L., 2005. Marketing and making carbon dumps: commodification, calculation and counterfactuals in climate change mitigation" Science as Culture, 14, 203-235.

Lovell H, Bulkeley H, Liverman D., 2009. Carbon offsetting: sustaining consumption?' *Environment and Planning A*, 41: 2357-2379.

Putz, F.E., Redford, K.H., 2009. Dangers of carbon-based conservation.*Global Environmental Change*, 19: 400-401.

Robertson M M., 2000. No net loss: wetland restoration and the incomplete capitalization of nature. *Antipode*, 32: 463-493.

18. The environment-versus-growth debate (17th Dec)

(*) Beckerman, W. 1992. Economic growth and the environment. *World Development*, 20(4): 481-496.

(*) Daly, H.E. 2005. Economics in a full world. *Scientific American* 293(3).

(*) van den Bergh, J., de Mooij, R. 2002. Growth and the environment in Europe: a guide to the debate. Empirica, 29: 79-91.

Kallis, G. 2011. In defence of degrowth. Ecological Economics, 70(5): 873-880.

van den Bergh, J.C.J.M. 2009. The GDP Paradox. *Journal of Economic Psychology*, 30(2): 117-135.

van den Bergh, J.C.J.M. 2011. Environment versus growth - A criticism of "degrowth" and a plea for "a-growth? *Ecological Economics*, 70(5): 881-890.