

SYLLABUS

Name of the course:	Ecological economics			
Teacher:	Alexandre Berthe (coordinator) <u>Other involved teachers:</u> Louison Cahen Fourot, Christophe Goupil, Pascal Grouiez, Esther Regnier, Améline Vallet, Romain Svartzman.			
University / organisation:	LiRIS, Univ. Rennes / LIED, University of Paris (for the coordination)			
Language of teaching:	English			
ECTS:	4			
Semester (S1, S2, S3 or S4):	<input type="checkbox"/> S1	<input type="checkbox"/> S2	<input checked="" type="checkbox"/> S3	<input type="checkbox"/> S4
Teaching method(s):	<input checked="" type="checkbox"/> Lecture courses		<input type="checkbox"/> Flipped classroom	
	Other:			
Type(s) of evaluation:	<input type="checkbox"/> Sitting exam		<input checked="" type="checkbox"/> Written report	
	<input type="checkbox"/> Oral defence		<input type="checkbox"/> Group project	
	Other / comments:	Critical analysis of an article proposed by the teachers		
Expected deadline(s) for the evaluation(s):	Choice of the article: mid-november			
	Critical analysis report: January, 31			
Expected date of final results:	End of February			
Summary of the content:	<p>Ecological economics is a transdisciplinary field that develops concepts and studies to understand the interfaces between human societies and the natural environment. In this lecture, we present the main development of this critical approach to apprehend the issues related to the current ecological crisis such as climate change, energy and resource issues, pollution or material flows in a context of increasing inequalities in the world. This approach integrates new objectives for economies: future generations, sustainability, equity or non-anthropocentric issues. In order to apprehend these questions, we give an overview of methods and subjects of this field at the macroeconomic level (how to include energy, matter and pollution in macroeconomic modelling?, What are the institutions for resources and common goods management?, What is the link between growth and Anthropocene?) and at the microeconomic level (How to understand the behaviours and values relative to environmental issues?, How to link inequalities with environmental policies and degradation?, How to evaluate the natural environment and for what objectives?). We also identify new epistemological issues (How to define an interdisciplinary science? What are the links between science and society on these issues?).</p>			

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Indicative list of lectures:

1 - Ecological economics a new paradigm? 1: epistemological issues and dissimilarities with environmental economics (Alexandre Berthe)

- Røpke, I., 2005. Trends in the development of ecological economics from the late 1980s to the early 2000s. *Ecological Economics* 55, 262-290.
- Røpke, I., 2004. The early history of modern ecological economics. *Ecological Economics* 50, 293-314.
- Spash, C.L., 2012. New foundations for ecological economics. *Ecological Economics* 77, 36-47.
- Illge, L., Schwarze, R., 2009. A matter of opinion—How ecological and neoclassical environmental economists and think about sustainability and economics. *Ecological Economics* 68, 594-604.

2 - Ecological economics a new paradigm? 2: an historical perspective (Antoine Missemmer)

- Christensen, P. P. (1989). Historical Roots for Ecological Economics—Biophysical versus Allocative Approaches. *Ecological Economics*, 1, 17-36.
- Franco, M. P. V. (2018). Searching for a Scientific Paradigm in Ecological Economics: The History of Ecological Economic Thought, 1880s-1930s. *Ecological Economics*, 153, 195-203.
- Martinez-Alier, J. (1987). *Ecological Economics—Energy, Environment and Society*. Oxford: Basil Blackwell Ltd.

3 - Ecological macroeconomics 1: heterodox contributions and scale issues (Louison Cahen-Fourot)

- Cahen-Fourot, L. (2020). Contemporary capitalisms and their social relation to the environment. *Ecological Economics*, 172.
- Cahen-Fourot, L., & Magalhães, N. (2020). Matter and regulation: Sociometabolic and accumulation regimes of French capitalism since 1948. *WU Wien Ecological Economic Paper*, 34.
- Dafermos, Y., Nikolaidi, M., & Galanis, G. (2018). Climate Change, Financial Stability and Monetary Policy. *Ecological Economics*, 152, 219-234.
- Hardt, L., & O'Neill, D. W. (2017). Ecological Macroeconomic Models: Assessing Current Developments. *Ecological Economics*, 134, 198-211.
- Rezaei, A., & Stagl, S. (2016). Ecological macroeconomics: Introduction and review. *Ecological Economics*, 121, 181-185.

4 - Ecological macroeconomics 2: money and ecological economics (Romain Svartzman)

- Campiglio, E., 2016. Beyond carbon pricing: The role of banking and monetary policy in financing the transition to a low-carbon economy. *Ecological Economics*, 121, 220-230.
- Svartzman, R., Dron, D., Espagne, E. (2019). "From Ecological Macroeconomics to a Theory of Endogenous Money for a Finite Planet". *Ecological Economics* 162 (C), 108-120.
- Svartzman, R. (2021. Forthcoming). Monetary and financial policies for an ecological transition - An overview of central banks' actions and some reflections on post-Keynesian insights, in S. Kappes, L.P. Rochon and G. Vallet (Eds), *The Future of Central Banking*, Edward Elgar.

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- Cahen-Fourot, L. (2021. Forthcoming). Confusion is not radical: debunking the debunking of 1 the debunking of the monetary growth imperative 2 (and ways to move forward). Working paper.
- Svartzman, R., Althouse, J. (2020). “Greening the International Monetary System? Not without addressing the political ecology of global imbalances”. Review of International Political Economy.

5 - Ecological macroeconomics 3: materiality and physics perspective (Christophe Goupil)

- Georgescu Roegen, N., 1986. The entropy law and the economic process in retrospect. Eastern Economic Journal 12, 3-25.
- Dafermos, Y., Nikolaidi, M., Galanis, G., 2017. A stock-flow-fund ecological macroeconomic model. Ecological economics 131, 191-207.
- Couix, Q 2020. Georgescu-Roegen's Flow-Fund Theory of Production in Retrospect, Ecological Economics.
- Couix, Q 2019. Natural resources in the theory of production: the Georgescu-Roegen/Daly versus Solow/Stiglitz controversy, The European Journal of the History of Economic Thought
- Ayres, R.U., Warr, B., 2009. The Economic Growth Engine: How useful work creates material prosperity. Cheltenham, Edward Elgar.
- Ayres, R.U., Warr, B., 2010. The Economic Growth Engine: How Energy and Work Drive Material Prosperity. Edward Elgar Publishing.
- Timothy Mitchell, Carbon Democracy. Le pouvoir politique à l'ère du pétrole, Paris, La Découverte, 2013, 330 p., traduit de l'anglais par C. Jaquet.

6 - Ecology and ecological economics 1: How to give a value to ecosystems? (Améline Vallet)

- Costanza, R. et al. (2017). Twenty years of ecosystem services: How far have we come and how far do we still need to go? Ecosystem services, 28, 1-16.
- Harrison, P.A. et al. (2018). Selecting methods for ecosystem service assessment: A decision tree approach. Ecosystem Services, 29(C), 481-498.
- Pascual, U., et al. (2017). Valuing nature's contributions to people : the IPBES approach. Current Opinion in Environmental Sustainability, 26-27, 7-16.

7 - Ecology and ecological economics 2: Bioeconomic modelling (Esther Regnier)

- De Lara, M., & Doyen, L. (2008). Sustainable management of natural resources: mathematical models and methods. Springer Science & Business Media.
- Aubin, J. P., Bayen, A. M., & Saint-Pierre, P. (2011). Viability theory: new directions. Springer Science & Business Media.
- Roche, P., Geijzendorffer, I., Levrel, H., & Maris, V. (2016). Valeurs de la biodiversité et services écosystémiques. Perspectives interdisciplinaires. Quae, Versailles.
- Petschel-Held, G., & Schellnhuber, H. J. (1998). The tolerable windows approach to climate control: Optimization, risks, and perspectives. In

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	<p>Cost-Benefit Analyses of Climate Change (pp. 121-139). Birkhäuser, Basel.</p> <p>8 - Institutions and ecological economics 1: Institutional ecological economics (Pascal Grouiez)</p> <ul style="list-style-type: none"> • Andersson, K. (2006) Understanding decentralized forest governance: an application of the institutional analysis and development framework, <i>Sustainability: Science, Practice and Policy</i>, 2:1, 25-35. • Ostrom, E. (1990). <i>Governing the Commons: The Evolution of Institutions for Collective Action (Political Economy of Institutions and Decisions)</i>. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511807763 • Ostrom, E., and Basurto, X. (2011). Crafting analytical tools to study institutional change. <i>Journal of Institutional Economics</i>, 7(3), 317-343. • Schlager, E., & Ostrom, E. (1992). Property-Rights Regimes and Natural Resources: A Conceptual Analysis. <i>Land Economics</i>, 68(3), 249-262. <p>9 - Institutions and ecological economics 2: Social relation to the environment and the inequality-environment nexus (Alexandre Berthe)</p> <ul style="list-style-type: none"> • Martinez-Alier, J., 2002. <i>The environmentalism of the poor: a study of ecological conflicts and valuation</i>. Edward Elgar Publishing, Cheltenham. • Martinez-Alier, J., 1995. The environment as a luxury good or “too poor to be green”? <i>Ecological Economics</i> 13, 1-10. • Berthe, A., Elie, L., 2015. Mechanisms explaining the impact of economic inequality on environmental deterioration. <i>Ecological Economics</i> 116, 191-200. • Boyce, J.K. et al., 2016, Measuring environmental inequality, <i>Ecological Economics</i>, 124, 114-123. • Cahen-Fourot, L. (2020). Contemporary capitalisms and their social relation to the environment. <i>Ecological Economics</i>, 172.
Short bibliography:	<p>General handbooks and useful readings:</p> <ul style="list-style-type: none"> • Martinez-Alier, J. et al., 2015, <i>Handbook of ecological economics</i>, Edward Edgar Publishing. • Spash, C.L., <i>Routledge handbook of ecological economics</i>, Routledge. • <i>Ecological Economics Journal</i>, Elsevier. • Douai, A., Plumecoq, G., 2018, <i>Économie Écologique</i>, La découverte, Repères.