

Teacher(s)	Gaspart Frédéric ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	<i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i>
Main themes	In the first part, the course presents and discusses the theoretic fundamentals, necessary to apprehend the questions of environment and natural resources conservation and management (theory of the social welfare and of efficiency, public goods and externalities, property rights and cost-benefit analysis.) In the second part, the course presents and compares 1) the most common evaluation methods of damages and benefits to the environment and 2) the economical and statutory instruments of the environmental politics (standards, taxes, subsidies, tradable pollution permits.) In the third apart, the course approaches the questions of optimal resource allocation, distinguishing the renewable from the exhaustible resources. The course concludes on questions of sustainable development. Case studies, examples and exercises are used to illustrate the concepts and the methods studied.
Learning outcomes	At the end of this learning unit, the student is able to : a. <u>Contribution of the activity to the program LO</u> 1.1-1.3, 1.5, 2.1-2.3 microeconomics, optimization, game theory 3.1-3.2, 4.1-4.2 connecting a narrative with a typical problem, knowing which information must be looked for 3.3, 4.3 finding the relevant elements to build and solve a simple microeconomic model 3.5-3.7, 4.4 interpreting the conclusions of microeconomic models and their limits, assessing variations in a vicinity of classical hypotheses 6.2, 6.4 homeworks 7.1-7.4 normative economics, welfare assessment of decision making 1 b. <u>Specific formulation of LO for this activity :</u> At the end of the course, students will be able : - to understand and to use the elements of microeconomic theory that are necessary in the fields of environmental economics and natural resources economics. - to identify, characterize and represent with mathematical tools the typical problems of environmental and natural resources management. - to define and to solve a normal-form game corresponding to a simple situation of strategic interaction. - to connect the main policy instruments with the problems for which they are relevant. - to assess Pareto-efficiency and welfare comparisons in equilibrium situations (competitive or Nash equilibrium) with or without policy intervention in a simple microeconomic model.
Evaluation methods	Written exams by e-mail on 14 points. Participatory assessment during the semester on 6 points ; the exact formula is explained during the first lecture and on Teams.
Teaching methods	Lectures and homeworks.
Content	- Individual choice, properties of individual demand, model of a private firm - General equilibrium : concepts, Pareto-efficiency, fundamental theorems of Welfare economics - Competitive model with unilateral pollution (Pigou), inter-temporal free access («model of fisheries») and privately owned resources ("Hoteling's Law") - Strategic models of public goods, reciprocal pollution, Tragedy of the Commons (including the Coase solution and tradable permits) Students receive periodically consolidation-and-discovery homeworks. Homeworks must be solved within ten days and are then discussed during the lectures.
Inline resources	Teams

Bibliography	Rien d'obligatoire. Divers articles ou manuels peuvent être conseillés à des étudiants pour des questions spécifiques.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Biology of Organisms and Ecology	BOE2M	3		
Minor in Development and Environment	MINDENV	3		
Minor : Issues of Transition and Sustainable Development	MINDD	5		
Interdisciplinary Advanced Master in Science and Management of the Environment and Sustainable Development	ENVI2MC	5		
Master [120] in Chemistry	CHIM2M	3		
Master [120] in Chemistry and Bioindustries	BIRC2M	3		
Master [120] in Agriculture and Bio-industries	SAIV2M	3		
Bachelor in Bioengineering	BIR1BA	3	LBIR1260	
Master [120] of Education, Section 4 : chemistry	CHIM2M4	3		