UCL Université catholique de Louvain

LBIRA2104B

2015-2016

Decision Tools

2.0 credits	20.0 h	2q

Teacher(s) :	Georges Benoît ; Gaspart Frédéric ;
Language :	Anglais
Place of the course	Louvain-la-Neuve
Inline resources:	Icampus
Prerequisites :	General skills for a bio-engineering bachelor, animal and vegetal productions, introductory management, micro-economics and introduction to game theory
Main themes :	- Part 1 After an introduction on the agricultural production economy, the role of major production factors in the efficient management of agricultural firms is characterized. The mains tools for analysis and decision making are explained and used in practical exercises. The main agricultural and food branches are outlined. The development of the agricultural sector in Belgium and in Europe is analysed. - Part 2 The course outlines, explains and compares various decision problems and decision-making tools within the unifying framework of game theory. It distinguishes (and shows the complementarities of) statistics and economic analysis. Complex decisions under uncertainty in situations with several interacting decision-makers are illustrated with relevant examples.
Aims :	a. Contribution de l'activité au référentiel AA (AA du programme) 1.1-1.5, 2.1-2.5 game theory, agency, farm management techniques 3.2-3.3 matching real situations with archetypal problems 3.4 solving mathematical models (game theory and operation research) 3.6-3.8 interpreting the results of abstract models (course+homeworks) 4.1-4.2 identifying typical problems in complex situations 4.4-4.7 drawing lessons from abstract models for complex, real situations 5.1-5.4 & mp; 5.7 farm management techniques 5.8, 7.1 & mp; 7.5 agency and contract theory (game theory) 6.2 & mp; 6.6-6.7 homeworks b. Formulation spécifique pour cette activité des AA du programme At the end of the course, students will be able : (Part 1) - to identify and to compare specific characteristics of the major agricultural production factors from the viewpoint of economics and management. - to understand and to use the mains decision-making tools available at the farm level and at the regional level. - to analyse the structure, functioning and performance of the main agricultural production and agricultural branches. - to apply the concepts and analysis techniques in supervised exercises. (Part 2) - to understand in depth various decision problems and decision-making tools commonly relied upon in fields relevant for the students. - to formulate strategic (i.e. interactive) decision problems in a rigorous mathematical framework (game theory). - to pick up adequate methods for solving multi-agents decision problems under uncertainty. - to interpret the results of mathematical models of strategic interaction with a view to formulating practical recommandations for problem-solving. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Evaluation methods :	Written exams, mainly exercises for both parts
Teaching methods :	Classes and homeworks
Content :	Part 1) 1. Present discounted value 2. The main agricultural production factors 3. Decision making tools : global and partial budgets, linear programming, program planning, cluster and factorial analysis, risk analysis

	4. The main agricultural branches (including agro-food branches) 5. Transversal issues : taxes, prices, energy costs, pollutions, animal feed, organic production,... (Part 2) 1. Elements of games in developped forms (including VNM utility) 2. Non-cooperative bargaining (the Rubinstein model and variants) 3. Agency (1) : moral hazard and boiling-in-oil contracts 4. Agency (2) : screening vs statistical discrimination 5. Agency (3) : signaling
Faculty or entity in charge:	AGRO

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Agriculture and Bio-industries	SAIV2M	2	-	