UCLouvain

# lecge1333

*2019*

# Game theory and information in economics

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

| 5 credits | 30.0 h + 10.0 h | Q2 |
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| Teacher(s) | Davila Muro Julio ;Dehez Pierre ; |
| Language : | English |
| Place of the course | Louvain-la-Neuve |
| Main themes | The first part of the course provides the basis of decision theory and game theory. The second part is devoted to the economy of uncertainty. The third part is devoted to the Information Economy |
| Aims | 1 This course is designed for students of the orientation of the economy Bac ECGE (BAC3) who want to deepen the analysis of economic problems associated with uncertainty and information based on the tools of decision theory and games. The themes of uncertainty and information are vast. We chose to address the most important during the first ten weeks. We suggest a range of topics of interest for weeks: each year, specific topics will be treated according to the needs and tastes of students attending the course. An initial list of topics of interest is suggested. At the end of the course, students will master the theory of games used in the uncertain economy and information and be able to apply to economic problems in concrete they are relevant as tools for analysis and decision support.<br>- - - -<br>*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 | **Due to the COVID-19 crisis, the information in this section is particularly likely to change.**<br>The grade will be determined by a final written examination |
| Teaching methods | **Due to the COVID-19 crisis, the information in this section is particularly likely to change.**<br>Lectures and exercises sessions |
| Content | The course is divided into five chapters:<br>Chapter 1 Decision theory: preferences, utility, loteries, uncertainty, risk aversion<br>Chapter 2 Non-cooperative games: strategic form, best replies, dominant strategy,<br>Nash equilibria, extensive form, backward induction, subgame perfection,<br>Chapter 3 Two-player bargaining: axiomatic solutions.<br>Chapter 4 Cooperative games with transferable utility: characteristic function, cost sharing, core, Shapley value, normative applications.<br>Chapter 5 Voting games: weighted majority voting games, power indices. |
| Inline resources | Lecture notes and homeworks for the exercises sessions available on Moodle |
| Bibliography | |
| Faculty or entity in charge | ESPO |

## Programmes containing this learning unit (UE)

| Program title | Acronym | Credits | Prerequisite | Aims |
|---|---|---|---|---|
| Minor in Economics | LECON100I | 5 | | |
| Additionnal module in Mathematics | LMATH100P | 5 | | |
| Additionnal module in Economics | LECON100P | 5 | | |
| Master [120] in Forests and Natural Areas Engineering | BIRF2M | 5 | | |
| Master [120] in Chemistry and Bioindustries | BIRC2M | 5 | | |
| Master [120] in Agricultural Bioengineering | BIRA2M | 5 | | |
| Bachelor in Philosophy, Politics and Economics | PPE1BA | 5 | | |
| Master [120] in Environmental Bioengineering | BIRE2M | 5 | | |