MASTER BDEEM | COURSE SYLLABUS

Non Cooperative Game Theory

Strategic decision-making in economic environments

PROGRAMME	SEMESTER	CREDITS	CONTACT HOURS
Master 1	Semester 2	2 ECTS	15h Lectures

Course Description

This course introduces the main tools of noncooperative game theory. It starts by defining noncooperative games and makes a distinction between static and dynamic games, as well as between games with complete and incomplete information.

Then, some primary solution concepts are presented: strictly dominated actions, Nash equilibrium (in pure and mixed actions), and subgame perfect Nash equilibrium. Economic examples, sometimes borrowed from other courses, are often used to illustrate these concepts. These include market competition, negotiation, and other strategic interactions.

Learning Outcomes

- Distinguish between static and dynamic games, as well as those with complete and incomplete information.
- Model economic and business situations as non-cooperative static games.
- Construct decision trees, including scenarios with imperfect information.
- Compute primary solution concepts using numerical examples.

Indicative Content

1. **Fundamentals**: Definition of non-cooperative games.
2. **Game Structures**: Distinction between static and dynamic games, and complete and incomplete information.
3. **Solution Concepts**: Strictly dominated actions, Nash equilibrium (pure and mixed), and subgame perfect Nash equilibrium.
4. **Economic Applications**: Applying game theory to market competition and negotiation.

Teaching & Learning Approach

The course is structured around standard lectures integrated with practical applications.

Assessment

Written Exam