

CS-714

Games for Crowds and Networks

Celis Elisa

Cursus	Sem.	Type
Computer and Communication Sciences		Obl.

Language of teaching	English
Credits	4
Session	
Exam	Multiple
Workload	120h
Hours	56
Courses	28
Exercises	14
TP	14
Number of positions	50

Frequency

Every 3 years

Remark

Next time: Fall 2018

Summary

We will focus on the complex interplay between individuals and the networks/crowds that they form. We will study a variety of real-world problems on socioeconomic networks/crowds from the perspective of game theory, and develop the techniques required to rigorously analyze these problems.

Content**Learning outcomes:**

Students will learn core concepts from game theory including but not limited to: strategic/extensive form, pure/mixed strategies, equilibrium concepts, mechanism design, proper scoring rules, social welfare and price of anarchy. Students will become familiar with a variety of application areas, and understand how to model and approach them from a game theoretic point of view.

Students will directly apply this knowledge in a mini-project for the cour

Content:

- Introduction to Game Theory
- Strategic Network Formation
- Auctions and Targetting
- Political and Signed Networks
- Evolution and Ethics
- Information Cascades
- Stability and Tipping Points
- Matching Markets
- Prediction Markets
- Eliciting truthful behavior
- Bargaining and Power in Networks

Keywords

Game theory, networks, crowds, markets, aggregate behavior

Learning Prerequisites

Important concepts to start the course
mathematical maturity