

Network Science & Economics (MA)

Spring Semester 2020

Content

Course Goal Students will:

- a) **learn** how to describe and analyze social networks,
- b) **understand** some of the most important ideas developed in network science,
- c) **analyze** microeconomic models of network formation.

Course description Facebook and LinkedIn are two well-known examples of social networks. However, the importance of relationships is not restricted to the online world and, similarly, the term social networks includes various applications outside of online social networks; examples range from ancient marriage networks to R&D collaborations between firms. The analysis of social networks has become one of the liveliest fields of research in economics, as well as in other social sciences. This course gives an introduction into this field and thereby puts emphasis on economic models of network formation.

Outline

1. Introduction to social networks
2. Analyzing social networks
3. Strategic network formation
4. Outlook: behavior on networks

Organisation

Date	Time	Lecture / Exercises	Room
Friday 20.02.2020	8:15 - 10:45	Lecture	PER 21 F207
Friday 27.02.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 05.03.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 12.03.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 19.03.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 26.03.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 02.04.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 09.04.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 23.04.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 30.04.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 07.05.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 14.05.2020	8:15 - 10:45	Exercises and Lecture	PER 21 F207
Friday 28.05.2020	8:15 - 10:45	Exercises, Lecture, Questions	PER 21 F207

Exercise tutorials are given from 8:15 to 9:00.

Lecture is given from 9:15 to 10:45.

Examination

Final Exam This class is graded through an end of semester written exam. The exam is 60 minutes long.

Supporting Materials

Lecture & Exercises All materials required for the class are available on Moodle.

The best preparation material for the final exam is the material shared during the lecture and exercises. Students are particularly advised to independently prepare for the exercise tutorials.

Reference books The main text book is Jackson (2010).

JACKSON, M.O. (2010). *Social and Economic Networks*. PRINCETON UNIVERSITY PRESS.

BRAMOULLE, Y., GALEOTTI, A. AND ROGERS, B. (2016). *The Oxford Handbook of the Economics of Networks*. OXFORD UNIVERSITY PRESS.

EASLEY, D. AND KLEINBERG, J. (2010). *Networks, Crowds, and Markets: Reasoning About a Highly Connected World*. CAMBRIDGE UNIVERSITY PRESS.