

Graph Theory and Complex Networks: An Introduction

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Course overview

Goals

- 1 Introduce the basic mathematical tools to understand the fundamentals of complex networks
- 2 Provide the skills that are needed to perform basic analyses of such networks

Means

- 1 Study fundamental concepts from graph theory and random networks
- 2 Lots of exercises in proving properties of various well-known networks
- 3 Practice the use of network analysis tools: Mathematica with Combinatorica

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Some practical matters

- In principle: per week two lectures along with two tutorials
 - Maarten van Steen: lectures [“hoorcollege”] (in Dutch)
 - Spyros Voulgaris: tutorials [“werkcollege”] (in English)
 - Albana Gaba: assistance with practical work
- Weekly homework assignments:
 - Graph-theoretical exercises
 - Using Mathematica/Combinatorica
 - Reading two (simple) scientific papers
 - Constructing and analyzing graphs (aim for 2009/2010)
- There is a midterm exam
- Final exam covers theory and homework

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