Social Network Analysis - Methods, Concepts and Applications

Code 8807974043

ECTS credits 7

Attendance time 4

Language of instruction German

Duration 1 Semester

Cycle each Winter Semester

Coordinator Prof. Dr. Mathias Klier; Institute of Technology and Process Management

Instructor(s) Prof. Dr. Mathias Klier; Institute of Technology and Process Management


Recommended prerequisites -

Learning objectives Students who graduated this module

• are able to model social networks and know the respective theoretical foundations,
• know and are able to explain the central characteristics (e.g., scale free networks) and phenomena (e.g., small-world phenomenon) of social networks,
• are able to evaluate and apply different methods to identify central members in social networks for real-world applications,
• are familiar with diffusion models (e.g., of information or epidemics) for social networks and able to critically reflect on possible practical applications,
• know and understand important growth models for social networks,
• are able to analyze (real-world) data of social networks applying social network analysis (also using software tools), to interpret the results and to derive recommendations.
### Syllabus
The following contents are addressed in this module:

- Modelling social networks and theoretical foundations
- Random networks and scale free networks
- Small-world phenomenon
- Centrality and communities in networks
- Diffusion in networks (e.g., of information, innovations and epidemics)
- Network growth models

### Literature

### Teaching and learning methods
Lecture (2 SWS) and Exercises (2 SWS)

### Workload
- In-class: 80 h
- Self-study: 130 h
- **In sum: 210 h**

### Assessment
The grade of the module will be the grade of the written exam. No prerequisites are necessary for exam registration.

### Grading procedure
The grade of the module will be the grade of the exam.

### Basis for
Schwerpunktfach Technologie- und Prozessmanagement, Wahlpflicht BWL