

# Network Analysis Methods 2

## Network Science

Organization

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# Contact

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# Organization

- Attendance at seminars and preparation for the seminars is compulsory.
- Ongoing activities: 19-36 points
- Written test: 10-20 points
- Implementation: 12-24 points
- Data analysis: 10-20 points

# Topics

- Large-scale networks, representation, complexity
- Network dynamics, evolution
- Information spreading
- Link prediction
- Multilayer social networks

# Books

- Barabási, A. L. (2016). *Network Science*. Cambridge University Press.  
*On-line <http://barabasi.com/networksciencebook/>.*
- Leskovec, J., Rajaraman, A., Ullman, J. D. (2014). *Mining of massive datasets*. Cambridge University Press.  
*On-line <http://www.mmids.org/#ver21>*
- Newman, M. (2010). *Networks: an introduction*. Oxford University Press.
- Zaki, M. J., Meira Jr, W. (2014). *Data Mining and Analysis: Fundamental Concepts and Algorithms*. Cambridge University Press.  
*On-line <http://www.dataminingbook.info/pmwiki.php/Main/BookDownload>.*

# Tools

- **Gephi** <http://gephi.github.io/>
- *Pajek* <http://vlado.fmf.uni-lj.si/pub/networks/pajek/>
- *NodeXL* <http://nodexl.codeplex.com/>
- *Cytoscape* <https://cytoscape.org/>
- *Python libraries, e.g., NetworkX* <https://networkx.org/>