(Introduction to) Network Analysis 2020/21

Week	Date	Lectures	Labs	Out	Due	Challenge	Comment
1	Feb 15th	Networks motivation, graph theory → network science, course overview	/				
2	Feb 22nd	Graphology & networkology, network representations, formats & data	/	Homework #0		Four knights	
3	Mar 1st	Erdos-Renyi & configuration models, random graphs vs real networks	Network representations, basic network algorithms	Homework #1	Homework #0		
4	Mar 8th	Node position & measures of centrality, link analysis algorithms	Advanced network algorithms, graph models			Grand graph	
5	Mar 15th	Link importance & measures of bridging, small-world networks	Measures of centrality, PageRank algorithm		Homework #1		
6	Mar 22nd	Scale-free distributions & networks, preferential attachment models	Small-world models, Homework #1 review	Homework #2		÷-vector centrality	
7	Mar 29th	Assortative & disassortative mixing, fragments & frequent subgraphs	Scale-free models, graphs vs networks				
8	Apr	Community structure, community	Node degree mixing, course		Homework	Five	

	5th	detection & graph partitioning	project overview ↓		#2	networks	
9	Apr 12th	Equivalence, blockmodeling & block models, core-periphery structure	Community detection & graph partitioning	Homework #3			
10	Apr 19th	/	/				*Web '21*
11	Apr 26th	Structural network comparison, node layout & network visualization	Block models & k-cores, Homework #2 review		Homework #3	PageRank challenge	
12	May 3rd	Network collection & sampling, network backbones & skeletons	Network comparison, board with pegs & bands				
13	May 10th	Network inference & link prediction, network-based mining	Random-walk sampling, Homework #3 review		Project proposal		
14	May 17th	Invited talk on machine learning with graphs (Ilya Makarov)	Network-based mining, balanced spanning trees				
15	May 24th	Applications in software, fraud, scientometrics & war	Course project consultations				
…	…		…				*Exam period*
18	Jun 14th		Course project presentations		Project deadline		