Website: https://bdagroup.nl/?p=1222
Material: https://github.com/BiosystemsDataAnalysis/AlgBioMolNet2025

1. Monday   28-4-2025   Lab42, L1.17   Networks in biology

Dick	09.00-09.30	Lecture	Introduction and presentation.
Dick	09.30-10.00	Lecture	A brief overview of molecular biology: DNA, RNA, proteins and metabolites. High-throughput measurement techniques and databases available
	10.00-10.15	*Break*	
Dick	10.15-11.00	Lecture	The role of networks in molecular biology. Examples of biological networks. Network descriptions. NEW: inferred networks (STRING), network platforms (OmniPath) etc.
	11.00-11.15	*Break*	
Dick	11.15-12.15	Lecture	Network properties, topology and visualization. Network motifs
	12.15-13.15	*Lunch*	
Dick	13.15-15.00	Lab	Graph visualization and properties
	15.00-15.15	*Break*	
Dick/Aalt-Jan	15.15-16.30		Presentations by students on (networks in) their research (5m + questions): present yourself, your project and what you hope to learn in 3 slides
	16.30-?	BioCafé [TBD]	

2. Tuesday   29-4-2025   Lab42, L1.08   Network inference

Pariya	09.00-09.45	Lecture	Undirected graphical models
	09.45-10.00	*Break*	
Pariya	10.00-11.15	Lab	Introducing packages, analyze different omics
	11.15-11.30	*Break*	

Pariya	11.30-12.15	Lecture	Directed graphical models (causal)
	12.15-13.15	*Lunch*	
Pariya	13.15-14.30	Lab	Causal network inference on omics data
	14.30-14.45	*Break*	
Pariya	14.45-15.45	Paper reading	
	15.45-16.00	*Break*	
Pariya	16.00-17.00	Paper discussion	

3. Wednesday   30-4-2025   Lab42, L1.08   Network models and inference

Edoardo Saccenti	09.00-09.45	Lecture	Network models: ODE based, Boolean, Bayesian and relevance networks
	09.45-10.00	*Break*	
Edoardo	10.00-11.15	Lab	Hands on exploration of some frequently used network models
	11.15-11.30	*Break*	
Edoardo	11.30-12.15	Lecture	Approaches for reconstruction of biological networks from measurement data
	12.15-13.15	*Lunch*	
Edoardo	13.15-14.30	Lab	Hands on building networks from measurement data
	14.30-14.45	*Break*	
Edoardo	14.45-15.45	Paper reading	
	15.45-16.00	*Break*	
Edoardo	16.00-17.00	Paper discussion	

4. Thursday   1-5-2025   Lab42, L1.08   Network-based data analysis

Aalt-Jan	09.00-09.45	Lecture	Network clustering, community finding, network alignment.
	09.45-10.00	*Break*	
Aalt-Jan	10.00-11.15	Lab	Network clustering (cytoscape and/or igraph)
	11.15-11.30	*Break*	
Aalt-Jan	11.30-12.15	Lecture	Refresher supervised learning; Network-based stratification. Network-based classification and enrichment testing.
	12.15-13.15	*Lunch*	
Aalt-Jan	13.15-14.30	Lab	Network-based classification
	14.30-14.45	*Break*	
Aalt-Jan	14.45-15.45	Paper reading	
	15.45-16.00	*Break*	
Aalt-Jan	16.00-17.00	Paper discussion	

5. Friday	**2-5-2025**	**Lab42, L1.17**	**Network modelling and execution**
Anton/Jaap	09.00-9.45	Lecture	Introduction to executable modelling
	09.45-10.00	*Break*	
Anton/Jaap	10.00-10.30	Lecture	Petri nets for biological systems
Anton/Jaap	10.30-11.15	Lecture	Exhaustive modeling of epistatic interactions
	11.15-11.30	*Break*	
Anton/Jaap	11.30-12.15	Lecture	Validation of logical models of epistasis
	12.15-13.15	*Lunch*	
Anton/Jaap	13.15-15.00	Paper discussion	
	15.00-15.15	*Break*	
Anton/Jaap	15.15-16.30	Lab	Practical network modeling