


2.00 credits

15.0 h

Q2

Teacher(s)	Heeren Alexandre ;
Language :	English
Place of the course	Louvain-la-Neuve
Learning outcomes	
Evaluation methods	First session: Oral test (9 points /20) and oral presentation and discussion of a research paper (7 points / 20) + continuous assessment via homeworks (4 points / 20) Second session: Oral test (20 points /20)
Teaching methods	Teaching and assessment will be delivered via a classroom setting, on the Louvain-la-Neuve campus, but could be carried out remotely (via Teams) should the health situation require to do so.
Content	<p>Graph theory and network analysis have started to infiltrate psychological sciences, especially in research agendas dealing with large datasets. Accordingly, this course will provide a general overview of the application of graph theory and network analysis in psychological sciences. Applications on real data sets will be provided throughout the workshop. Given the audience's diversity, illustrations will range from social networks to brain networks and symptoms networks.</p> <p>Through this course, participants will:</p> <ul style="list-style-type: none"> - become familiar with general notions of graph theory and network analysis - learn how to model network data using R, to implement algorithms from the field of graph theory (e.g., community detection, small-worldness), and to use up-to-date tools from statistical network analysis (e.g., graphical Lasso, subset bootstrap, Bayesian modeling) to optimize network estimation and visualization - understand the advantages, challenges, and limitations of network analysis in comparison to other analytical approaches - and become able to critically assess papers dealing with network analysis and graph theory in psychological sciences.
Inline resources	Handouts, as well as examples of R programming codes, will be made available via Moodle.
Bibliography	A list of reading articles will be provided at the end of each session.
Faculty or entity in charge	EPSY

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Statistics: General	STAT2M	2		
Master [120] in Education (shift schedule)	FOPA2M	2		