

Advanced workshops of analysis methods - Complex dynamic approach to psychological phenomena (including graph theory)

2.00 crédits	15.0 h	Q2
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Enseignants	Heeren Alexandre ;
Langue d'enseignement	Anglais
Lieu du cours	Louvain-la-Neuve
Thèmes abordés	Chaque année, une liste d'ateliers est proposée aux étudiants. Ces ateliers abordent de façon détaillée les outils, les méthodes et les analyses spécifiquement utilisés dans la recherche en Psychologie et Sciences de l'Education. Chaque atelier a une durée de 15 heures
Acquis d'apprentissage	
Modes d'évaluation des acquis des étudiants	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)
Méthodes d'enseignement	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.
Contenu	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. Through this course, participants will: - 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.
Ressources en ligne	Handouts, as well as examples of R programming codes, will be made available via Moodle.
Bibliographie	A list of reading articles will be provided at the end of each session.
Faculté ou entité en charge:	EPSY

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Crédits	Prérequis	Acquis d'apprentissage
Master [120] en sciences psychologiques	PSY2M	2		