London Interdisciplinary Social Science Doctoral Training Partnership

Advanced Research Methods in Social Sciences

Course Code & Title	**LISS238 Social Network Analysis**		
Convenor(s)	Dr Eelke M. Heemskerk & Dr Frank W. Takes, Political Science, University of Amsterdam		
Institution	King's College London	Department	LISS DTP
Academic Year	2019-20	Term	Autumn
Number of Sessions	4 sessions over 2 days	Length of Session(s)	6 hours per day
Day, Date		**Start : End**	**Room Location**
Wednesday 6 November 2019 **Thursday 7 November 2019**		1000 - 1700 1000 - 1700	1.63 Maughan Library, Strand Campus 1.63 Maughan Library, Strand Campus
Enrolment Link:	http://bit.ly/liss238 (You may be prompted to log into SkillsForge)		

Course Description: This course familiarises PhD students with the main network theories in social science and develop basic skills in network analysis. After completion you are familiar with the theoretical and methodological underpinnings of the social network perspective and are able to conduct a basic network analysis. Throughout the course we will focus on applying SNA to empirical data, where possible related to the students own research.

The course starts with an overview of social network theory and basic concepts in SNA. We contextualise SNA within the social sciences, exploring differences between the focus on social relations and approaches that focus on individual attributes. Students will then be presented with examples of important contributions that SNA has made to our understanding of human society. Finally, fundamental concepts used to describe network topologies will be introduced.

From this we move to an introduction in several network analysis methods and measures. Key issue here is how to find the best match between methods and techniques on the one hand, and your research question and type of data on the other. This also addresses issues such as 'what type of empirical data is suited for SNA?' and 'how does one collect and prepare data for analysis?'

Students will become familiar with social network theory and analysis as a practical set of research instruments to empirically investigate the theoretical questions. They will learn how to analyse network structures (for instance centrality; community detection) and visualize these networks using Gephi software package.

Course Outline:

Session 1: Social Network Theory and Concepts

Themes covered:

- The fundamentals of a social network approach

- What has SNA broad us so far? Fundamental insights and recent innovations, including: Six degrees of separation; Small Worlds & Structural Holes; Power laws; Contagion and diffusion
- Key concepts, including: Nodes and edges; Centralities; Cohesion and brokerage; Scale-free property (power law degree distribution); Assortativity

Session 2: Introduction to Network Analysis & Gephi

Themes covered:

- How to retrieve network data
- Data storage and data types
- Become familiar with Gephi
- Import, visualize and manually inspect network data through Gephi

Session 3: Recent advances in social network analysis research and how you can use this for your own research

Themes covered:

- Introduction to Network Science, including:
- Big data network analysis;
- Complex vs complicated;
- Emergence
- Key concepts and measures, including community detection
- Data driven vs theory driven research approaches
- Formulate your research question from a network perspective

Session 4: SNA Laboratory with Gephi

Themes covered (hands-on):

- Data quality
- Network visualisation
- Network analysis
- Optional: network analysis in python

Reading List:

Required:

Scott, J. (2013). Social Network Analysis. A Handbook. London, Thousand Oaks, New Delhi, Sage Publications. Third edition. (Chapters 1 – 5)

Will be used during the course

http://gephi.github.io/tutorials/gephi-tutorial-quick_start.pdf

http://gephi.github.io/tutorials/gephi-tutorial-visualization.pdf

http://gephi.github.io/users/tutorial-layouts/

Eligibility:

You must be a PhD student at King's, Queen Mary or Imperial, and you must have already registered as a LISS DTP student via the following link: https://www.liss-dtp.ac.uk/registration/

Pre course preparation:

Students should have read the required chapters of Scott (see above)

For the hands on network analysis part of the course we use Gephi. If you prefer, you can install this on your own computers *before* the short course.

http://gephi.github.io/users/download/ (open source)

Number of students:

20