BUSINESS FACULTY

Course Study Guide

2014–15

Doing Research with SNA: Tools, Theories, and Applications

RESE 1131

Level 07: 15 credits

Contents

1. Welcome

Dear Students,

Welcome to the course Doing Research with SNA: Tools, Theories, and Applications.

This course is aimed at researchers and post-graduate students who are new to the field of Social Network Analysis (SNA), and would like to better understand whether and how they can use it to enhance their research programmes. Participants are not assumed to have any previous knowledge of SNA, or of any analytical or statistical software.

The goal of the course is to provide attendees with insight into how SNA can be used in scholarly practice in social sciences, politics, management, economics and neighbouring disciplines. It introduces participants to essential SNA concepts and theories, and gives them confidence in using key tools and techniques in practice, using specialist software (primarily Ucinet/Netdraw and pNet). It also includes elements of quantitative and qualitative research design, focusing on how SNA can be successfully integrated into a research project, paper, or dissertation, alone or in combination with other tools of analysis.

You can choose to attend the unaccredited version of the course or the accredited version (15 UK credits, equivalent to 7.5 ECTS). The only difference is that if you choose the accredited version, there is a graded assessment at the end.

The course comprises five components: 1) Theory, 2) Data and Methods, 3) Applications, 4) Hands-On Exercises, 5) Research Design.

We look forward to meeting you in Hamilton House and hope you will find the course interesting and useful.

Dr Paola Tubaro, course leader

2. Introduction to the Course

2.1 Aims

This course addresses the needs of researchers and post-graduate students who are new to the field of Social Network Analysis (SNA), and aim to understand whether and how they can use it to enhance their research programmes. All social science (and other) backgrounds are welcome, and participants are assumed to have no previous knowledge of SNA, or of any analytical or statistical software. The course provide attendees with a general overview of the field of SNA, and insight into how it can be used in scholarly practice in the social, economic and managerial disciplines.

2.2 Learning Outcomes

On attending this course, you will be able to:

- Demonstrate knowledge of the key principles, approaches and achievements of SNA
- Understand network data type, source and format
- Compute and interpret network metrics to analyse network data
- Visualise network data
- Use network analysis software
- Discuss similarities and differences between SNA and classical social science
- Develop network-oriented research questions
- Design data collection approaches for network data
- Apply basic modelling principles for network data
- Integrate a network component into a research project

2.3 Learning and teaching activities

This is a block course running for six working days from the 15th to the 20th of June 2015, from 9am to 1pm. Its building blocks are:

- *Lectures*, to present and discuss the main theories.
- *Tutorials*, to provide attendees with knowledge of the key principles, approaches and achievements of social network analysis; and experience in the use of network analysis and data visualisation tools, techniques, and software. Participants use computers/laptops to practise the use of relevant social network analysis software.
- *Self-study* with structured materials provided in class.

2.4 Expected study time

Activity	Hours	Overall percentage of total
Scheduled teaching	24	16%
Guided Independent Study	126	84%
Placement / Year Abroad	0	%
Total	150	100%

2.5 Additional Requirements

N/A.

3. Contact Details

	Room	Email address	Phone number
Course Leader: Dr Paola Tubaro	QM163	p.tubaro@greenwich.ac.uk	0208 331 9625
Course tutor: Yasaman Sarabi		y.sarabi@greenwich.ac.uk	
Guest lecturer: Dr Francesca Pallotti		f.pallotti@greenwich.ac.uk	
Programme Coordinator: Conferences and Executive Development	Hamilton House	BusinessEvents@greenwich.ac.uk	0208 331 9083

3.1 External Examining of Your Course and Programmes of Study

External examining at the University of Greenwich provides one of the principal means whereby the University verifies, maintains, and enhances the academic standards of the courses and the programme on which you are studying. They also help the University to ensure that your assessment processes are sound, fairly operated and in line with the policies and regulations of the University of Greenwich.

External examiners - academic staff from other Higher Education Institutions or from the professions - are appointed as reviewers of your courses and your programme of study for a period of 4 years. They provide the University with a number of important services. For example external examiners will

- Review and comment on the standard of key elements of assessment that you have been set.
- Review samples of student work and confirm whether the standard is at the level expected for the award you are studying and whether it is comparable with other Institutions that they know.
- Provide the University with an independent view of how well we conduct our processes for marking and internal moderation of assessments.
- Attend Progress and Awards Boards (PABs) and contribute to deliberations for conferring your degree classifications and awards, assisting the University in treating all students fairly and consistently with regard to our regulations. External examiners will endorse the outcomes of PABs based on their scrutiny of the assessments and the deliberations of the PAB. No degree award can be made without the assent of an external examiner.
- Report formally their findings to the University at the end of each year and identify our good practice as well as making recommendations for improvements in the future.

External examiner reports for your programme of study can be obtained electronically by request to the Academic Quality Unit. Your local Academic Quality Unit Manager is: John Melton, J.G.Melton@greenwich.ac.uk

If you want to request a report for the last year, please state the programme on which you are registered in your request. Undergraduate reports are usually available from 1st September, Postgraduate reports later, usually November/December.

The external examiner for this course is: Mark Tranmer, University of Manchester.

4. Course Content and Design

Each session of the course includes one or more of five components: 1) Theory, 2) Data and Methods, 3) Applications, 4) Exercises, 5) Research Design.

- *Theory* introduces fundamental principles of SNA: their grounding in social theories, and their potential applications, ranging from the study of online networking and the Internet to more traditional forms of social interactions such as those occurring in the family, school, workplace or business environment. Participants are shown how the network perspective places emphasis on inter-individual relationships rather than individual attributes, thereby requiring a major change of mindset relative to standard social science approaches. The theory part also includes presentation of well-known applications of SNA and milestones in the literature, to show how a network perspective has illuminated aspects of society and the economy that could not be easily understood otherwise. All theoretical presentations are accompanied by examples and case studies.

- The more technical *Data and Methods* covers type, structure and format of network data; approaches to data collection, in quantitative, qualitative and mixed-methods perspective; metrics and measures of network structure; and an introduction to statistical inference tools and models for network data.

- *Applications* allow participants to reflect on concrete research problems and solutions adopted in actual research projects.

- In the *Exercises*, attendees will learn how to apply the notions learned in the Data and Methods parts of the lectures to training datasets, using primarily UCINET/Netdraw, and pNet.

- *Research Design* emphasizes how a research project can meaningfully integrate an SNA component, and how it should be adapted to do so successfully. In particular, attention is drawn to the development of network-oriented research questions, as well as the design of network data collection, and their integration in qualitative and quantitative approaches.

On the last day (Saturday, 20 June), our special guest lecturer Dr Francesca Pallotti will offer an introduction to more advanced material, presenting tools for the statistical analysis of network data. Her presentation will include elements of theory and methodology plus concrete examples of applications, and hands-on exercises with pNet.

4.1 Session Plan

Date	Contents	Session Description	Tutor
15-June-15	Theory	Welcome and Introduction	Tubaro
		What is SNA, and what it is used for; what is a network - introduction to graph theory; online and face-to-face networks	
	Data and Methods	Data formats (edgelists, nodelists, adjacency matrices; directed and undirected ties; binary and valued ties; one and two-mode networks); personal and whole networks; data visualisation (basics)	
	Exercises	Writing data files; importing data files into UCINET; visualising networks with Netdraw; matching node attributes and tie data	Sarabi
16-June-15	Theory	The network perspective: local and global structure	Tubaro
	Data and Methods	Network metrics: Measures of connectedness and cohesion	
	Exercises (I)	Small worlds	Tubaro & Sarabi
	Exercises (II)	Calculating network measures of connectedness and cohesion in UCINET	Sarabi
17-June-15	Theory	Networked markets	Tubaro
	Research design	Data collection: surveys with name generators and interpreters; rosters; archives; data from the Internet	
	Applications	How many friends do you have? Interpreting the size and structure of personal networks	
	Exercises (I)	A graphical personal network data collection exercise with ANAMIA_Egocenter	
	Exercises (II)	Practising UCINET with different data sets	Sarabi
18-June-15	Theory	Activity, power and status through the lens of centrality concepts in networks	Tubaro
	Data and Methods	Centrality measures; centralisation	
	Research design	Mixing methods	
	Exercises	Calculating centrality in UCINET; visualising actors' centrality in Netdraw.	Sarabi
	Participants' presentations		
19-June-15	Data and Methods	Substructures: communities, subgroups and clusters Homophily and segregation	Tubaro
	Applications	Weak ties, strong ties and the effects of homophily: networks in the labour market	
	Research design	Introduction to network-friendly statistical models	
	Exercises	Detecting substructures with UCINET/Netdraw	Sarabi
	Participants' presentations		
20-June-15	Special guest lecture	Exponential Random Graph Models: a tool for inference on network data	Pallotti

4.3 Session Required Reading

Every session will bring together contents from a combination of different sources. Specific information about the reading lists associated with each session will be provided in class.

However, the following can be used as general background readings for the course:

Required for completion:	Reference
15-19 June	Garry Robins. *Doing Social Network Research. Network-based Research Design for Social Scientists*, Sage, 2015.
15-19 June	Marina Hennig, Ulrik Brandes, Jürgen Pfeffer, Ines Mergel. *Studying Social Networks: A Guide to Empirical Research*, Campus-Verlag, 2012.
15-19 June	Stephen B. Borgatti, Martin G. Everett, Jeffrey C. Johnson. Analyzing Social Networks. Sage, 2013.
17 June, 19 June	Matthew O. Jackson. *Social and Economic Networks*, Princeton UP, 2010.
17 June, 19 June	David Knoke. *Economic Networks*, Polity, 2012.
15-18 June	Christina Prell. *Social Network Analysis: History, Theory and Methodology*, Sage, 2011.
18-19 June	Thomas W. Valente. *Social Networks and Health: Models, Methods and Applications*, Oxford University Press, 2010.

5. Assessment Details

All students will receive a certificate of attendance. Only students requiring accreditation will be assessed.

5.1 Summary of assessment

Assessment Title	Weight towards final grade	Length	Due Date	Anonymous Submission Required?	Anticipated Return Date	Header Sheet number
Class presentations	30%	N/A	18-19 June (class time)	No	3 July 2015	
Course project (final)	70%	3,000	9 July 2015 at 3pm	No	30 July 2015	

5.2 Rules for anonymous submission and marking:

From 2014/15 the University has moved as far as practicable to anonymous marking as research shows that this is the fairest and most equitable approach. However, this does not apply to this course where assessment is based on an individual research project that cannot be made anonymous.

5.3 Detailed description of assessment

If you choose the accredited version of the course, you will be assessed at the end. You will be asked to design a research project on a topic of your choice, integrating a social networks component. (This may or may not be a part of your doctoral thesis, research paper or other existing project). You will first give a short presentation of your preliminary idea in class during the course (18 or 19 June). You will receive formative feedback, and your contribution will be assessed based on soundness and interest of the idea as well as on quality of presentation. You will use the feedback received in class to further develop your proposal, and submit it (electronically) in the form of an essay one month later.

In more detail, for your in-class presentation, you should prepare a maximum of THREE slides in which you very briefly summarize, respectively:

- the type and source of data to be used
- the analysis to be performed
- the purposes and expected contribution of the study.

Each slide should contain no more than 3 statements/ bullet points (or even better a picture that underlines and illustrates your statements). You need to make your ideas understandable to others

(who may know nothing about your field!), so please try to be clear, concise and convincing. You will have FIVE minutes to present your ideas; please be aware that this limit will be strictly enforced.

The proposal you will write in July, as the final part of your assessment, has expected length of about 3000 words (+/- 10%). It should present your project in more detail and possibly provide the results of a pilot study.

Marking Criteria	Marks allocated to criteria:
Focus Does the project set up a clear research question to address? Does it stay within and fulfil the topic parameters?	20
Synthesis Does the project indicate good understanding of the relevant SNA literature? Does it bring together existing knowledge in a meaningful manner?	30
Soundness Do the research design and the methods chosen address the research question? Do they fit with the literature? Are they practically doable? Does SNA fit well with other relevant aspects of the research design?	30
Clarity of structure Is the presentation / essay well organised and logically constructed to achieve synthesis while being mindful of the needs of the audience?	10
Mechanical Soundness (Essay only) Is the essay clearly written, spell checked and grammatically sound and referenced appropriately?	10
Mechanical Soundness (Presentation only) Are the slides visually well-presented, clearly written, and sufficiently synthetic to attract the attention of the public? Is the oral presentation clear and engaging? Are questions from the audience answered appropriately?	10

6. Other Details

Please refer to your course leader and programme administrator for any further information you might require including:

- How to submit assignments,
- Deadlines and extenuating circumstances,
- Plagiarism and referencing,
- Who to go to for advice or if you are concerned,
- How to provide us with feedback,
- Key administrative procedures.