



Course and Examination Fact Sheet: Autumn Semester 2020

7,390: Network Analysis

ECTS credits: 4

Overview examination/s

(binding regulations see below)

Decentral - examination paper written at home (individual) (40%)

Examination time: term time

Decentral - examination paper written at home (individual) (60%)

Examination time: term time

Attached courses

Timetable -- Language -- Lecturer

[7,390,1.00 Network Analysis](#) -- Englisch -- [Westerwinter Oliver](#)

Course information

Course prerequisites

Familiarity with basic matrix algebra and R programming would be an advantage.

Learning objectives

This course is an introduction to network analysis. Students will learn the basic concepts and analytic techniques of network analysis and how they can be employed to study substantive socio-political phenomena. Topics covered include network data collection and management including data collection based on web scraping and text analysis, formulation of network hypotheses, network description and visualization, and methods for making statistical inferences with and about networks. We will make use of substantive applications in various social sciences with a focus on political science and international relations. Students will be introduced to common software packages for network analysis in R. Students will engage in their own analyses, using either their own data or replication data that has appeared in published work in political science.

Course content

Politics, and social life more generally, is about networks. People, organizations, groups, and states are connected through a range of relationships. Organizations, for example, can be linked through project collaborations, flows of financial resources, or shared members. States in the international system are related to each other through trade, military alliances, and violent conflict among others. The patterns of such relationships constitute networks. The position of actors within these networks as well as the overall structural characteristics of networks can have an important impact on the behavior of agents and other outcomes of interest for social scientists. For example, the network ties of individuals may influence their voting behavior in an election, non-governmental organizations that occupy central positions in the network of human rights organizations may be more successful in launching human rights advocacy campaigns, and states that are central in the international trade network may be less likely to engage in violent conflict.

The study of networks in the social sciences has grown rapidly in recent years. Social scientists are investigating the effects of networks on a broad range of socio-political phenomena including political participation, voting behavior, congressional voting, terrorism, revolutions, transnational advocacy campaigns, policy diffusion, alliance formation, and war. Network analysis provides a repertoire of theoretical propositions and methods to study the properties, antecedents, and consequences of networks.

Course structure

The course will take place on a weekly basis in the fall semester 2020. There will be no classes during the semester break.



The course will be taught in an online format using Canvas and Zoom. The exam requirements will not be affected by the format of the course. The recordings of the course are available for 30 days. The lecturer informs via StudyNet in case further changes of the course format are necessary.

Course literature

The syllabus will provide a list of required and optional readings for the class. Relevant readings include, but are not limited to:

- Carrington, Peter J., John Scott, and Stanley Wasserman. 2005. *Models and Methods in Social Network Analysis*. New York: Cambridge University Press.
- Hanneman, Robert A. and Mark Riddle. 2005. *Introduction to social network methods*. Riverside: University of California, Riverside. (<http://faculty.ucr.edu/~hanneman>)
- Jackson, Matthew. 2008. *Social and Economic Networks*. Princeton: Princeton University Press.
- Knoke, David and Song Yang. 2008. *Social Network Analysis*. Second edition. London: Sage.
- Robins, Garry. 2015. *Doing Social Network Research. Network-based Research Design for Social Scientists*. London: Sage.
- Scott, John. 2013. *Social Network Analysis*. Third edition. London: Sage.
- Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis. Methods and Applications*. New York: Cambridge University Press.

Additional course information

The lecturer will inform about the exact specificities of the course in the first session and regularly during the course of the semester.

For additional information, please contact Oliver Westerwinter (email: oliver.westerwinter@unisg.ch).

Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form

Decentral - examination paper written at home (individual) (40%)

Examination time: term time

Remark

Term paper

Examination-aid rule

Term papers

Term papers must be written without anyone else's help and in accordance with the known quotation standards, and they must contain a declaration of authorship which is a published template in StudentWeb.

The documentation of sources (quotations, bibliography) has to be done throughout and consistently in accordance with the chosen citation standard such as APA or MLA.

For papers in law, the legal standard is recommended (by way of example, cf. FORSTMOSER, P., OGORÉK R. et SCHINDLER B., *Juristisches Arbeiten: Eine Anleitung für Studierende*, newest edition respectively, or according to the recommendations of the Law School).

The indications of the sources of information taken over verbatim or in paraphrase (quotations) must be integrated into texts in accordance with the precepts of the applicable quotation standard, while informative and bibliographical notes must be added as footnotes (recommendations and standards can be found, for example, in METZGER, C., *Lern- und Arbeitsstrategien*, newest edition respectively).

For any work written at the HSG, the indication of the page numbers is mandatory independent of the chosen citation standard.



Where there are no page numbers in sources, precise references must be provided in a different way: titles of chapters or sections, section numbers, acts, scenes, verses, etc.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Decentral - examination paper written at home (individual) (60%)

Examination time: term time

Remark

Three problem sets, 20% each

Examination-aid rule

Term papers

Term papers must be written without anyone else's help and in accordance with the known quotation standards, and they must contain a declaration of authorship which is a published template in StudentWeb.

The documentation of sources (quotations, bibliography) has to be done throughout and consistently in accordance with the chosen citation standard such as APA or MLA.

For papers in law, the legal standard is recommended (by way of example, cf. FORSTMOSER, P., OGOREK R. et SCHINDLER B., Juristisches Arbeiten: Eine Anleitung für Studierende, newest edition respectively, or according to the recommendations of the Law School).

The indications of the sources of information taken over verbatim or in paraphrase (quotations) must be integrated into texts in accordance with the precepts of the applicable quotation standard, while informative and bibliographical notes must be added as footnotes (recommendations and standards can be found, for example, in METZGER, C., Lern- und Arbeitsstrategien, newest edition respectively).

For any work written at the HSG, the indication of the page numbers is mandatory independent of the chosen citation standard. Where there are no page numbers in sources, precise references must be provided in a different way: titles of chapters or sections, section numbers, acts, scenes, verses, etc.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

Examination content

Your final grade will be determined by a term paper (40%) and three problem sets (20% each). For the term paper you are required to apply network analytical methods to a substantive problem of your choice. The problem should come from the area of social sciences broadly understood. The term paper should develop a research question, discuss the methodological strategy chosen to answer this question, execute some empirical analysis using network methods, and discuss the results. The term paper should not be longer than 5,000 words. The three problem sets provide exercises that allow you to repeat and deepen the material covered in class. They will contain a mixture of analytical and empirical problems.

Examination relevant literature

The syllabus will provide a list of required and optional readings for the class. Relevant readings include, but are not limited to:



Carrington, Peter J., John Scott, and Stanley Wasserman. 2005. *Models and Methods in Social Network Analysis*. New York: Cambridge University Press.

Hanneman, Robert A. and Mark Riddle. 2005. *Introduction to social network methods*. Riverside: University of California, Riverside. (<http://faculty.ucr.edu/~hanneman>)

Jackson, Matthew. 2008. *Social and Economic Networks*. Princeton: Princeton University Press.

Knocke, David and Song Yang. 2008. *Social Network Analysis*. Second edition. London: Sage.

Robins, Garry. 2015. *Doing Social Network Research. Network-based Research Design for Social Scientists*. London: Sage.

Scott, John. 2013. *Social Network Analysis*. Third edition. London: Sage.

Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis. Methods and Applications*. New York: Cambridge University Press.

Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are binding and takes precedence over other information, such as information on StudyNet (Canvas), on lecturers' websites and information in lectures etc.

Any references and links to third-party content within the fact sheet are only of a supplementary, informative nature and lie outside the area of responsibility of the University of St.Gallen.

Documents and materials are only relevant for central examinations if they are available by the end of the lecture period (CW51) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 42 are relevant for testing.

Binding nature of the fact sheets:

- Course information as well as examination date (organised centrally/decentrally) and form of examination: from bidding start in CW 34 (Thursday, 20 August 2020);
- Examination information (regulations on aids, examination contents, examination literature) for decentralised examinations: in CW 42 (Monday, 12 October 2020);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 42 (Monday, 12 October 2020);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before the end of the registration period in CW 44 (Thursday, 29 October 2020).