

TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV

Faculty of Sociology

Department of Methodology and Methods of Sociological Research



COURSE SYLLABUS  
Social Networks Analysis

for students

branch 05 Social and behavioral sciences  
specialty 054 Sociology  
level master  
education program Gender Studies  
type optional

Form of training full-time  
Year 20 /20  
Semester 4  
Number of ECTS credits 4  
Language of teaching learning English  
And evaluation English  
Form of final control pass grade

Course instructor: Yuriy Savelyev

valid for 20 /20 ( ) « » 20

на 20 /20 ( ) « » 20

Kyiv – 2020

Ble 07.2

developed by:

Savelyev Y., Dr.Sc. in Sociology, Associate Professor of Department of Methodology and Methods of Sociological Research

APPROVED

Head of Department of Methodology and Methods of Sociological Research

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Head of the Scientific and Methodological Commission of the Faculty of Sociology

« 28 » 08 2020

### Course description

The 4 ECTS course "Social network analysis" is designed for full-time training sociology students. The language of instruction is English and the course is scheduled for the third semester of master degree program in sociology.

**The course goal** – students' comprehension of basic principles and ability to use social network analysis (SNA) to advance their research competencies.

#### Prerequisites to student's knowledge and skills:

1. Knowledge of basic methods of data collection and analysis
2. Computer intermediate skills
3. English level to read professional literature and comprehend lecture materials

#### The course summary:

Methods of analysis of social networks are necessary to identify and understand the structural relationships between different actors (individuals, organizations, countries, etc.) in contemporary society. These methods are of particular importance along with development of Internet communications and the global spread of social networks. The course aims to introduce research potential, theoretical and methodological foundations of social network analysis methods and develop basic skills to design and conduct network analysis in practice using programming environments Pajek, Gephi, R or UCINET.

#### The course learning objectives:

- Knowledge of essential SNA concepts, measures, methods and SNA potential in research of social interactions
- Knowledge and skills to design research of networks and choose appropriate SNA methods
- Basic skills of collecting and processing network data
- Basic skills of analysis of networks in programming environments Pajek, Gephi, R or UCINET

This aims at developing students' competencies:

- Ability to use the latest methods of collecting and analyzing sociological information to solve practical problems (fk11)
- Ability to perform critical analysis of theoretical, methodological and practical professional literature (fk14)
- Ability to apply a sociological approach to the analysis of gender issues (fk15)

### 5. Learning outcomes (PH):

Learning outcomes		Forms or methods of teaching	Methods and criteria of evaluation	Proportion of finale grade
Код	Learning outcome			
1.1	Knowledge of essential SNA concepts, measures, methods and SNA potential in research of social interactions	Lecture, practice class, individual work	test with answer options and open answers	20
1.2	Specificity of social network research planning and peculiarities of using network analysis methods	Lecture, practice class, individual work	test with answer options and open answers	10
2.1	Plan, select appropriate data collection and analysis methods, and conduct social network research	Lecture, practice class, individual work	test with answer options and open answers	20
2.2	Perform of network data collection and analysis	Lecture, practice class, individual work	test with answer options and open answers	20
2.3	Perform analysis of networks in programming environments Pajek, Gephi, R or UCINET	Lecture, practice class, individual work	test with answer options and open answers	30

### 6 Relation of the learning outcomes of the discipline with the program outputs (optional for non-specialty disciplines)

Learning outcomes	Program outcomes				
	1.1	1.2	2.1	2.2	2.3
Apply the latest sociological theories and methods of analysis of social phenomena and processes (pn8)			+		+
Use modern information and communication technologies in professional communication; information exchange; collection, analysis, processing and interpretation of data and visual presentation of scientific results (pn11)	+			+	+
Use the latest methods of collecting and analyzing sociological information to solve practical problems (pn17)	+	+	+	+	+

## 7. Evaluation.

### 7.1 Evaluation forms:

#### - Semester evaluation:

1. KR 1 for topic 1, topic 2, topic 3, PH 1.1, PH 1.2, = 40 points / 24 points
2. KR 2 for topic 4, topic 5, topic 6, PH 2.1, PH 2.2, PH 2.3 as an analytical report on social networks research, presentation and network data file, PH 1.1, PH 1.2, PH 2.1, PH 2.2, PH 2.3 = 60 points / 36 points

#### - Final evaluation: *pass grade*

**7.2 Organization of the evaluation:** (the order of organization of the forms of assessment provided by the work curriculum with the indicative assessment schedule must be specified).

1. KR 1 on topic 1, theme 2, theme 3, PH 1.1, PH 1.2, must be submitted in writing and in electronic form during a practical class - after topic 3
2. KR 2 for topic 4, topic 5, topic 6, PH 2.1, PH 2.2, PH 2.3 as an analytical report on social networks research and presentation of results, must be submitted during a practice class in writing and in electronic form with the required network data file in a chosen format before the deadline stated in the thematic plan - after topic 6.

The breach of requirements, conditions and deadlines of the tasks, KR 1 and KR 2 submission will induce lower grade or the course failure. Submitted assignments which will have indication of plagiarism or other signs of infringement of academic integrity will receive unsatisfactory grade.

### 7.3 Grading

Pass	60-100
Fail	0-59

## 8. The course structure and thematic plan

№ п/п	Topic	Work hours		
		lectures	practice classes	students' individual work
<b>1. Analysis of networks in research of social processes (SNA)</b>				
1	1. Theoretical concepts and methodological foundations of SNA	4	2	10
2	2. Basic properties and metrics of social networks	4	4	10
3	3. Centrality measures in SNA	2	4	10
4	<i>Control assignment 1 (KR 1)</i>			10
<b>2. SNA application in sociological research: collecting and processing network data</b>				
5	4. Research design, network data collection and processing	4	2	5
6	5. Methods of network analysis	2	4	5
7	6. Analysis of networks in programing environments Pajek, Gephi, R or UCINET	4	4	10
8	<i>Control assignment 2 (KR 2) as an analytical report of network research project, presentation and network data file</i>			20
	<b>Overall</b>	<b>20</b>	<b>20</b>	<b>80</b>

**Total 120 hours, including:**

Lectures – 20 hours

Practice classes – 20 hours

Individual work - 80 hours

## 9 Literature:

### Main

1. Borgatti S., Everett M., Johnson J. Analyzing Social Networks. London: SAGE, 2018.
2. Luke D. A Users Guide to Network Analysis in R. Springer, 2015.
3. Wasserman S., Faust K. Social Network Analysis. Cambridge: Cambridge University Press, 1994.
4. de Nooy W., Mrvar A., Batagelj V. Exploratory social network analysis with Pajek: Revised and expanded edition for updated software. Cambridge: Cambridge University Press, 2018.
5. Gephi Tutorials: Learn how to use Gephi. URL: <https://gephi.org/users/>

### Optional:

1. Barabási A. L. Bursts: the hidden patterns behind everything we do, from your e-mail to bloody crusades. - Penguin, 2010.
2. Granovetter The Strength of Weak Ties. *American journal of sociology*, 1973. Volume 78 Number 6
3. Encyclopedia of social networks / Barnett George A., ed. - Sage Publications, 2011.
4. Knoke D., Yang, S. Social network analysis. London: SAGE, 2019.
5. Models and Methods in Social Network Analysis. Cambridge: Cambridge University Press, 2005.
6. Padgett, J. F., & Ansell, C. K. (1993). Robust Action and the Rise of the Medici, 1400-1434. *American journal of sociology*, 98(6), 1259-1319.
7. Savelyev Y. Social network analysis: Learning package for students in specialty 054 Sociology, master education level. - K.: Taras Shevchenko National University of Kyiv, 2020. – 52 p.
8. Scott J. Social network analysis. 4<sup>th</sup> edition. London: Sage, 2017.
9. UCINET 6 for Windows USER'S GUIDE. 2002.

## 10. Resources:

1. Gephi <https://gephi.org>
2. Pajek <http://mrvar.fdv.uni-lj.si/pajek>
3. R packages <https://cran.r-project.org>
4. Freeman L. 2004 The development of social network analysis. [https://www.researchgate.net/publication/239228599\\_The\\_Development\\_of\\_Social\\_Network\\_Analysis](https://www.researchgate.net/publication/239228599_The_Development_of_Social_Network_Analysis)
5. Hanneman R., Riddle M. Introduction to Social Network Methods [https://www.researchgate.net/profile/Robert\\_Hanneman/publication/235737492\\_Introduction\\_to\\_Social\\_Network\\_Methods/links/0deec52261e1577e6c000000/Introduction-to-Social-Network-Methods.pdf](https://www.researchgate.net/profile/Robert_Hanneman/publication/235737492_Introduction_to_Social_Network_Methods/links/0deec52261e1577e6c000000/Introduction-to-Social-Network-Methods.pdf)
6. Lada Adamic 2012 Social Network Analysis, University of Michigan <https://open.umich.edu/find/open-educational-resources/information/si-508-networks-theory-application>
7. Matthew Jackson 2017 Social and Economic Networks: Models and Analysis, Stanford University <https://www.coursera.org/learn/social-economic-networks>
8. VoxUkraine 2018 Property – connecting politicians: a network analysis of Ukrainian top officials' declarations <https://voxukraine.org/longreads/declarations-graph/index-en.html>
9. UCINET free trial version valid for 60 days <http://www.analytictech.com/ucinet/trial.htm>