UNIVERSITATEA DIN BUCUREȘTI
VIRTUTE ET SAPIENTIA
INTERDISCIPLINARY SCHOOL OF DOCTORAL STUDIES
FACULTATEA DE STUDII INTERDISCIPLINARE
UNIVERSITATEA DIN BUCUREȘTI

Strada Transilvaniei, nr. 6, sector 1, București, ROMÂNIA
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DISCIPLINE SHEET
Academic year 2025-2026

1. About the program

1.1 Higher education institution	University of Bucharest
1.2 Faculty	Faculty of Interdisciplinary Studies
1.3 Department	Interdisciplinary School of Doctoral Studies – ISDS-UB
1.4 Field of study	-
1.5 Study cycle	Doctorate
1.6 Study program / Qualification	***Mind, Language and Cognition***

2. About the discipline

2.1 Name of the discipline				Network analysis			
2.2 Holder of the course				**Prof. Univ. Dr. Marian-Gabriel Hâncean**			
2.3 Holder of the seminar				**Prof. Univ. Dr. Marian-Gabriel Hâncean**			
2.4 Study year	I	2.5 Semester	**II**	2.6 Evaluation type	**E**	2.7 Discipline regime	

3. Total estimated time

3.1 Number of weekly hours		3.2 out of which course:		3.3 seminar/laboratory	
3.4 Total hours in the curriculum	**125**	3.5 out of which course:	**6**	3.6 seminar/laboratory	**6**
Distribution of time:					**hours**
Study according to the textbook, course material, bibliography and notes					**63**
Additional documentation in the library, on specialized electronic platforms and in the field					**20,5**
Preparation of seminars/laboratory, assignments, papers, portfolios and essays					**22**
Tutoring					**7**
Examinations					**0,5**
Others……					**0**

3.7. Total hours of individual study	**113**
3.8. Total hours per semester	**125**
3.9. Number of credits	**5**

4. Preconditions (where applicable)

4.1 curriculum	The course does not require mandatory prior coursework in social network analysis. It is recommended that students have basic knowledge of social science research methods and introductory statistics, as typically acquired in undergraduate-level methodology courses.
4.2 skills	Students are expected to have basic computer literacy and familiarity with using statistical software at an introductory level. Basic skills in data handling and an openness to learning programming tools (e.g., R) are recommended. No advanced programming skills are required at the beginning of the course.

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5. Conditions (where applicable)

5.1 course delievery	Room with multimedia equipment (e.g., video projector, smart board, WI-FI)
5.2 conducting the seminar/laboratory	Room with multimedia equipment (e.g., video projector, smart board, WI-FI)

6. Learning outcomes

Knowledge	Upon successful completion of the course, students will be able to: • explain the fundamental concepts and terminology of social network analysis; • describe key types of social networks, relations, nodes, and ties; • understand core network measures and structures (e.g., centrality, cohesion, components); • identify major network research designs and data collection strategies; • understand the principles of statistical modeling and inference in network analysis; • recognize ethical considerations specific to social network research.
Skills	Upon completion of the course, students will be able to: • collect and manage social network data using appropriate research instruments; • transform and prepare network data for analysis; • perform basic social network analyses using R and related software tools; • visualize network structures and interpret graphical outputs; • identify key actors, groups, and structural patterns in empirical networks; • design and implement a small-scale social network analysis research project; • communicate analytical results clearly through oral presentations and written reports.
Responsibility and autonomy	Upon completion of the course, students will be able to: • work independently or collaboratively to conduct a network analysis project; • take responsibility for data quality, ethical compliance, and analytical decisions; • critically assess the limitations of network data and methods; • apply network analysis techniques appropriately to real-world social research problems; • manage analytical tasks and deadlines in a structured research setting.

7. Contents

8.1 Course	Methods	Observations
_1_ Introduction to Social Network Analysis • What are social networks and why they matter • Nodes, ties, relations, and contexts • Types of networks (social, organizational, personal networks) • Examples of network research in the social sciences	Lecture (slide presentations), explanation, conversation	1,5 hours
_2_ Network data, research designs, and ethics • Network research designs (sociocentric, egocentric, personal networks) • Data collection strategies and instruments • Validity, reliability, and respondent burden • Ethical issues in social network research	Lecture (slide presentations), explanation, conversation	1,5 hours
_3_ Network measures, visualization, and pattern detection • Network structures and patterns	Lecture (slide presentations), explanation, conversation	1,5 hours

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• Centrality, cohesion, components, and groups • Network visualization principles and biases • Interpretation of network graphs		
_4_ Applied network analysis and interpretation • Introduction to network modeling and inference • Networks as outcomes and predictors • Applied examples using empirical data • Interpretation and communication of network analysis results	Lecture (slide presentations), explanation, conversation	1,5 hours

References:

- Network Analysis in the Social Sciences – Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Science, 323, 892–895.
- Analyzing Social Networks – Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2018). Sage.
- Moral Bureaucracies and Social Network Research – Molina, J. L., & Borgatti, S. P. (2021). Social Networks, 67, 13–19.
- Centrality in Social Networks – Freeman, L. C. (1979). Social Networks, 1, 215–239.
- Visualization of Biomedical Data - O'Donoghue et al. (2018).
- Computational Social Science – Lazer et al. (2009). Science, 323, 721–723.

8.2 Seminar / laboratory	**Methods**	**Observations**
The seminar/laboratory component is organized around **student-led presentations and discussions** of social network analysis topics. Its primary objective is to support students in developing and presenting a network-related research topic, either as an independent project or aligned with their PhD thesis. During the seminar/lab activities, students will: • select a social network analysis topic relevant to their research interests or doctoral work; • define research questions and appropriate network concepts and measures; • identify suitable network research designs and data sources; • prepare and deliver oral presentations supported by visual materials (e.g., slides, network graphs); • present network structures, measures, and analytical strategies in a clear and structured manner; • receive and provide peer and instructor feedback on conceptual, methodological, and analytical choices; • reflect critically on the applicability of network analysis to their own research domains; • discuss methodological, analytical, and ethical challenges encountered in network-based research.	The seminar/laboratory is conducted using student-centered and discussion-based teaching methods, with a strong emphasis on active learning and research-oriented training. The primary instructional method consists of student-led oral presentations, complemented by guided discussions and formative feedback. Students are required to develop a social network analysis topic, either as an independent research exercise or integrated into their doctoral thesis. The seminar activities follow a structured process that includes topic selection, formulation of research questions, identification of appropriate network concepts and analytical strategies, and preparation of presentation materials. Teaching methods include: • oral presentations supported by visual materials (e.g.,	6 hours

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	slide presentations, network visualizations); • guided academic discussion moderated by the instructor; • peer feedback and collective methodological reflection; • instructor feedback focusing on conceptual clarity, methodological rigor, and analytical appropriateness. The seminar encourages autonomous research work, critical thinking, and scholarly exchange. Particular attention is given to the discussion of methodological choices, ethical considerations, and the applicability of social network analysis methods to diverse research contexts.	

References

- Egocentric network analysis with R – Vacca R. (2025) https://raffaelevacca.github.io/egocentric-r-book/
- Adapting Longitudinal Personal Network Research through Participation: Reflections from a Rural Study – Hâncean M-G et al. (2025) https://www.researchsquare.com/article/rs-8064502/v1
- From stakeholder mapping to statistical modeling: An illustrative demonstration of end-to-end Net-Map methodology for health governance analysis – Mihăilă B-E et al. (2025) https://www.researchsquare.com/article/rs-7837431/v1
- Comparing name generator designs in rural panel studies: analyzing alter retention and change - Hâncean M-G, McCarty C, Lerner J (2025) https://arxiv.org/abs/2506.10136

8. Correlating the content of the discipline with the expectations of representatives of the epistemic community, professional associations and representative employers in the field related to the program

The content of the discipline is aligned with the expectations of the epistemic community of social network analysis (e.g., The International Network for Social Network Analysis - INSNA, the Winter Course delivered by The Autonomous University of Barcelona), as well as with the methodological standards promoted by relevant professional associations (e.g., INSNA) and research-oriented employers in the social sciences and related fields (e.g., The Center for Innovation in Medicine).

The course reflects current theoretical and methodological developments in social network analysis, as documented in widely used academic references and peer-reviewed research. It addresses key competencies expected by the international research community, including the ability to design network-based studies, manage and analyze relational data, apply appropriate statistical models, and critically interpret results.

Through its emphasis on student-led research presentations, and methodological reflection, the course responds to the expectations of: academic and research institutions employing graduates with advanced methodological training; professional associations in sociology, social research, public health, and computational social science

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that promote rigorous empirical methods; public and private organizations that value expertise in data analysis, research design, and evidence-based decision-making.

By allowing students to develop network analysis topics aligned with their doctoral research, the course supports the integration of advanced methodological skills into ongoing research projects, enhancing both academic relevance and professional applicability. The focus on ethical considerations, transparency of analytical choices, and clear communication of results further aligns the course content with contemporary standards of responsible research and professional practice (Responsible Research and Innovation framework).

9. Assessment

Type of activity	Assessment criteria	Evaluation methods	Weight in the final grade
Course	Understanding of key concepts and theories in social network analysis; ability to explain and critically discuss methodological approaches	Responses to questions addressed during the oral presentation	40%
Seminar / laboratory	Quality of the presented network topic; clarity of research questions; appropriateness of network concepts and methods; coherence of analysis; quality of presentation and ability to respond to questions	Oral presentation supported by visual materials (slides, network graphs); peer and instructor feedback	40%
Participation to meetings	Active participation (e.g., participation to discussions)		20%
Minimum performance standard	To successfully pass the course, students must: • demonstrate a basic understanding of fundamental concepts and methods in social network analysis; • obtain at least the minimum passing grade for both the course component and the seminar/laboratory component; • deliver a coherent oral presentation of a network analysis topic, showing the ability to formulate research questions and justify methodological choices. Failure to meet the minimum performance standard in either component results in non-promotion, regardless of the overall average.		

Fill in date:
9.02.2026

Holder of the course,
Prof. Univ. Dr. Marian-Gabriel Hâncean

Director ISDS-UB,
Conf. Dr. Habil. Mihaela MATACHE