

NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
"IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE"
FACULTY OF SOCIOLOGY AND LAW

**CATALOGUE
OF ELECTIVE EDUCATIONAL DISCIPLINES
CYCLE OF PROFESSIONAL TRAINING
for master's degree holders
under the educational program "Social Data Analytics"
in specialty 054 Sociology**

ADOPTED:

Methodical council Igor Sikorsky KPI
(protocol No. 8 dated, 03/06/2024)

Academic Council of the Faculty of Sociology
and Law Igor Sikorsky KPI
(protocol No. 10 dated, 20/06/2024)

Introduction

The choice of academic disciplines takes place exclusively through the specialized information system of the University my.kpi.ua.

During the first month of study in the week of September scientific and pedagogical staff of the faculty, organize presentations of selective academic disciplines, certificate programs and clarification of the rules for choosing academic disciplines. If necessary, and curators of academic groups provide appropriate consultations on the formation of an individual educational trajectory. During the first two weeks of the first month of study, students of the second (master's) level choose academic disciplines from the Catalogue for the next academic year.

Within the limits of the number of disciplines in the faculty (inter-faculty) Catalogue, the student can choose disciplines both from the departmental Catalogue and from the Catalogue of other educational programs, provided that the prerequisites of the relevant disciplines are met. At the same time, a slight difference in the volume of training sessions of various disciplines and for different specialties is allowed. The normative number of higher education students in groups for studying selected disciplines is 10-15 students for the master's higher education.

It is allowed to study selected disciplines of Catalogues in groups with a smaller number than the normative one: 1) if the discipline was chosen by all higher education students studying under the corresponding educational program; 2) if the teaching of a discipline in a group with a smaller number will not cause an excess of the maximum educational load of the teachers of the department, established by the legislation. At the request of a higher education student who has chosen a certain elective discipline, he/she is allowed to join a group to which this discipline is taught within the framework of another educational program, including at another faculty. The relevant decision regarding the disciplines taught at the faculty is made by the dean of the faculty. Regarding disciplines taught at another faculty (institute), the relevant decision is made by the dean of the faculty with the consent of the dean of that faculty (director of the institute), whose department provides teaching of this discipline.

At the same time, the student who has chosen such a discipline must agree in writing to possible minor changes in the scope of the discipline, the form and scope of training sessions, and the form of semester control. A higher education student cannot choose the same academic discipline twice. If the higher education applicant was unable to choose disciplines in time for a good reason or for the same reason made a mistake in choosing, he can make (change) the choice of discipline by contacting the dean's office no later than two months before the start of classes in the relevant disciplines. The educational disciplines chosen by the student are indicated in the individual study plan.

Content

- 1 Cross-national research in sociology
- 2 The latest qualitative methods of data analysis
- 3 Public relations and crisis communications
- 4 Sociology of the election process
- 5 Propaganda and armed conflict
- 6 Sociology of mass communication and Internet
- 7 Monitoring and evaluation of programs and projects
- 8 Gender conflicts: history, theory, methods of settlement
- 9 Sociology of war: ideological discourses, mobilization practices
- 10 Academic writing and critical thinking
- 11 Contemporary Sociological Theories
- 12 Global Politics
- 13 Social Network Analysis (SNA)
- 14 Creation and development of IT products
- 15 Machine learning
- 16 Introduction to databases
- 17 Legal provision of the Internet of Things in the conditions of European integration
- 18 Information rights and human freedoms in Ukraine

Discipline	Cross-national research in sociology
Level of higher education	Second (master's)
Year of training, semester	2 semester
Scope of the discipline	5 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours.
Language of teaching	English
Department	Sociology, Faculty of Sociology and Law
Lecturer	Associate Professor, PhD in Sociology, Hennadiy Korzhov
Requirements for starting studies	Basic knowledge of sociology
What will be studied	<ul style="list-style-type: none"> Comparative method of research in sociology. Different types of cross-national research. Methodological problems of achieving data equivalence in cross-national studies. Examples of classical cross-national research: theoretical and methodological substantiation, hypotheses, results and conclusions. Comparison of Ukraine with other countries of Europe and the world.
Why is it interesting	Recently, there has been a trend in the social sciences towards the increasing use of comparative cross-national research. In the context of globalization and increasing interdependence between countries and peoples, the need to understand what they are similar and what is different, becomes not just a manifestation of natural human curiosity, but also vital knowledge. Within the proposed discipline, students will have the opportunity to understand how cross-national research is planned and conducted, what results it allows to obtain, how it helps to identify similarities and differences, what are its possibilities and limitations. Consideration of specific cross-national studies on a variety of topics will demonstrate how interesting and fruitful this area of research is. Students will learn what unites Ukrainians with other countries and cultures, what values and life guidelines we share with representatives of European countries.
Why you can learn (learning outcomes)	Knowledge of theoretical and methodological principles of organizing and conducting cross-national research; main results of international comparative studies with the participation of Ukraine; practical skills in the use of comparative indicators, indicators, indices and ratings, as well as in building intercultural communication.
How to use acquired knowledge and skills (competencies)	Having mastered this discipline, students will expand their scientific worldview, gain skills to build harmonious relationships with representatives of other nations. Working and studying in international teams requires greater tolerance, understanding of the way of life, culture, traditions and values of the Other. At the same time, familiarity with scientifically sound data and analytical models will help to debunk artificially created or inflated differences, which often result in xenophobia, conflict, or even war and genocide.
Information support	Multimedia lectures, data analysis workshop.
The form of classes	Lectures, presentations, analysis of specific cases, practical classes (discussions, public speeches, presentations).
Semester control	Exam

Discipline	The latest qualitative methods of data analysis
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Level of higher education	Second (master's)
Year of training, semester	First year, 2nd semester
Scope of the discipline	4 credits: Lectures – 18 hours, seminars – 36 hours, independent work – 66 hours.
Language of teaching	Ukrainian, English
Department	Department of Sociology
Lecturer	
Requirements for starting studies	Basic knowledge of general sociology and/or political science
What will be studied	<ul style="list-style-type: none"> – design of qualitative sociological research programs for the political, social, cultural and economic spheres, with an emphasis on the study of socio-political conflicts at the micro-macro levels; – qualitative approaches, theories, methods and techniques of data collection; – qualitative approaches, theories, methods and techniques of data processing; – presentations of qualitative sociological research; – cases of qualitative sociological research.
Why is it interesting	Completion of the course will provide an opportunity to plan and organize high-quality sociological research at the modern level.
Why you can learn (learning outcomes)	<ul style="list-style-type: none"> – apply relevant sociological theories and the results of sociological research to solve modern social problems; – develop research programs and conduct own sociological research; – use relevant data processing methods of sociological research, in particular computer technologies for data processing - for critical analysis of theory and practice in the field of sociology, conflict studies and other socio-behavioral sciences, critical assessment of research results, practical study, forecasting changes in objects of professional activity ; – independently solve specific scientific tasks using quantitative, qualitative, complex methods of social sciences, multi- and transdisciplinary scientific approaches using modern software and Internet technologies.
How to use acquired knowledge and skills (competencies)	<ul style="list-style-type: none"> - develop research programs and conduct own sociological research; - prepare a project proposal (in particular, a research project) for the purpose of obtaining funding; - evaluate the possible social consequences of reforms or other targeted social intervention for different social groups and social categories; - produce and critically evaluate the results of sociological research, in particular, explain their conceptual and methodological limitations.
Information support	Educational programs of disciplines, Syllabus. Active use of multimedia, analysis of specific research cases, regular invitation to classes of researchers from the "fields".
The form of classes	Lectures, presentations, analysis of specific cases, practical classes (discussions, public speeches, presentations).
Semester control	Test

Public relations and crisis communications	
Course, semester	1st year, spring semester
Scope	5 ECTS credits (150 hours) : Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours
Language of teaching	English
Department	Sociology Department, Faculty of Sociology and Law
Lecturers who provide teaching of the discipline	Igor Pygolenko, PhD, associate professor
Requirements for starting studies (interdisciplinary connections)	Basic knowledge of sociology
What will be studied	<ul style="list-style-type: none"> peculiarities of the organization of PR services in government, political and public organizations, military and law enforcement structures, commercial organizations, as well as the implementation of independent PR consulting activities; preparation presentation and communication events; evaluations of the effectiveness of PR campaigns; provision of scientifically based methods of anti-crisis communications.
Why is it interesting/should be studied?	Completion of the course will provide an opportunity to understand how the work of PR services is organized as structural units of organizations, the structure and features of PR consulting and the implementation of anti-crisis communications.
What you can learn (learning outcomes)	<ul style="list-style-type: none"> knowledge about the formation and features of public relations as a professional activity; knowledge and practical skills that a public relations specialist should possess; socio-psychological foundations of public opinion management and implementation of anti-crisis communications; features of external and internal communication.
How to use acquired knowledge and skills (competencies)	<ul style="list-style-type: none"> possess the peculiarity of the organizational and functional structure of the public relations service in government bodies, political and public organizations, state institutions, commercial organizations, military and law enforcement agencies, as well as PR-consulting structure; to possess the technique of constructing news and forms of submitting informational materials; skills in organizing and conducting communicative events (press conference, briefing, conference, presentation, round table); skills in compiling informational materials: press release, material for publication in the press, media card, media package, greetings.
Classes	Lectures, practical classes
Information support	Textbooks, study guides, video lectures
Current control	Modular control work, answers to practical classes.
Semester control	Exam

Discipline	Sociology of mass communications and the Internet
Level of higher education	Second (master's)
Year of training, semester	First year, 2nd semester
Scope of the discipline	5 credits: Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours
Language of teaching	English
Department	Department of Sociology
Lecturer	Associate Professor, Doctor of Philosophy . Tetiana V. Kolomiiets
Requirements for starting studies	Basics of general sociology and/or political science
What will be studied	<ul style="list-style-type: none"> – basic components of the theory of mass communications and the Internet; – features, models, stages of deployment of the mass communication process; – concepts of mass society and mass communications; – cyberspace as a social and cultural environment; – media culture and media literacy in modern realities; – Internet and education: challenges and prospects;
Why is it interesting	<p>Completing the course will provide an opportunity to find answers to urgent questions:</p> <ul style="list-style-type: none"> - Is it possible to organize a safe cyberspace? - Has the internet taught us how to think? - How to overcome Internet addiction? - How to counteract manipulation in mass communication? - Online education: utopia or new opportunities?
Why you can learn (learning outcomes)	<ul style="list-style-type: none"> – Knowledge of the concepts and categories of "communication", "mass communication", "masses", "Internet", "cyberspace"; – Knowledge of historical stages and theoretical approaches to sociological research of mass communications and the Internet; – ability to analyze mass communication processes; – the ability to improve one's own media culture and media literacy ;
How to use acquired knowledge and skills (competencies)	Students will acquire communicative competences (the ability for effective interpersonal interaction and productive teamwork), which will allow them to flexibly adapt to the changing labor market, the ability to think critically and generate new ideas, the ability to work in uncertain conditions and requirements.
Information support	Syllabus , curriculum of the discipline, lecture notes, cases.
The form of classes	Lectures, seminars, discussions, work with cases.
Semester control	Exam

Discipline	Monitoring and evaluation of programs and projects
Level of higher education	1st year, spring semester
Year of training, semester	5 ECTS credits (150 hours) : Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours
Scope of the discipline	English
Language of teaching	Sociology Department, Faculty of Sociology and Law
Department	Igor Pygolenko, PhD, associate professor
Lecturer	Basic knowledge of sociology / methodology and methods of sociological research / management
Requirements for starting studies	<ul style="list-style-type: none"> ● monitoring and specifics of its implementation; ● formulation of indicators, their role and significance in the monitoring process; ● collection of data necessary for evaluation of programs and projects; ● theory of change and its main components; ● basic approaches to assessment; ● development of the technical task for the assessment; ● analysis and interpretation of data in assessment; ● use of monitoring and evaluation.
What will be studied	<ul style="list-style-type: none"> — Completion of the course will give an opportunity to understand the peculiarities of monitoring and evaluation of programs and projects.
Why is it interesting	<ul style="list-style-type: none"> ● knowledge of basic concepts and definitions in the field of monitoring and evaluation; ● knowledge of the specifics of monitoring and evaluation; ● knowledge of the formation of indicators, their role and significance in the monitoring process; ● ability to analyze data necessary for evaluating programs and projects; ● knowledge of the theory of change and its main components; ● the ability to develop a technical task for evaluation; ● knowledge of the basic requirements for the qualification of an assessment specialist; ● knowledge of information collection and use methods; ● knowledge of analysis and interpretation of data in assessment; ● knowledge of the peculiarities of monitoring programs and projects.
Why you can learn (learning outcomes)	<ul style="list-style-type: none"> — apply basic approaches to monitoring and evaluation of programs and projects; — analyze data sets, perform triangulation; — know the principles of successful use of monitoring and evaluation in the implementation of programs/projects; — perform data analysis and interpretation; — monitor and evaluate programs and projects.
How to use acquired knowledge and skills (competencies)	<ul style="list-style-type: none"> — Lectures, practical classes
Information support	Textbooks, study guides, video lectures
Current control	Modular control work, answers to practical classes.
Semester control	Exam

Gender dimension of social conflicts: theory and practice	
Course, semester	1st year, spring semester
Scope of the discipline	5 ECTS credits (150 hours) : Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours
Language of teaching	English
Department	Sociology Department
Teachers who provide teaching of the discipline	Doctor of Philosophy , Associate Professor Tetiana V.Kolomiets
Requirements for starting studies (interdisciplinary connections)	Basic knowledge of social and humanitarian disciplines.
What will be studied	<p>The main goal of the educational discipline "Gender Dimension of Social Conflicts: Theory and Practice" is the formation of students' knowledge about the nature, essence and properties of gender conflicts, the mechanisms of their diagnosis, and tools for the resolution of gender conflicts.</p> <p>List of topics:</p> <ol style="list-style-type: none"> 1. Concept and essence of gender conflicts. 2. Feminism and problematization of gender conflicts. 3. Gender socialization of personality: determinants of gender conflicts. 4. Masculinity as a cause and effect of gender conflicts. 5. Social gender movement as a method of solving socio-political conflicts. 6. Peculiarities of gender conflicts in the family. 7. The role of mediation in the settlement of gender conflicts. 8. Professional competencies of the mediator. 9. Models and techniques of family mediation.
Why is it interesting/should be studied?	The acquired knowledge and skills allow analyzing gender conflicts, which appear as conflicts of gender roles and contradictions between expectations and reality in their implementation. Taking into account the gender dimension of socio-political conflicts is an important component of conflict resolution. Completion of the course will provide an opportunity to identify, diagnose and regulate gender conflicts using one of the most effective tools - mediation.
Why you can learn (learning outcomes)	<ul style="list-style-type: none"> • apply socio-scientific knowledge to conceptualize and develop effective approaches to conflict resolution that have social and/or political origins and occur at different levels of the social system; • to know the principles of diagnosis and analysis of gender dimensions of socio-political conflicts; • perform tasks, simulation exercises on mediation are aimed at forming competences in the resolution of gender conflicts
How to use acquired knowledge and skills (competencies)	<p>Acquired knowledge, skills and competences will allow:</p> <ul style="list-style-type: none"> • carry out a critical analysis of the causes of gender conflicts and ways of their resolution; • find, process and analyze information from various sources regarding the issue of gender conflicts; • to know the basic principles of the family mediation procedure; • work with the conflict map; • to find out the positions and interests of the participants in the conflict
Occupation	Lectures and seminars
Information support	Syllabus, study guides, monographs.

Individual semester assignments	Academic essay
Current control	Modular control work, answers to seminar classes
Semester control	Test

Discipline	Sociology of war: ideological discourses, mobilization practices
Level of higher education	Second (master's)
Year of training, semester	2 semester
Scope of the discipline	5 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours
Language of teaching	English
Department	Sociology, Faculty of Sociology and Law
Lecturer	Associate Professor, PhD in Sociology, Maksym Yenin
Requirements for starting studies	Basic knowledge of sociology
What will be studied	<ul style="list-style-type: none"> ● The essence and causes of war in a review of sociological theories. ● Traditional and modern wars: the evolution of social technologies and mobilization practices. ● The specificity of the work of a sociologist in the conditions of a military conflict: opportunities and limitations (Ukrainian experience). ● Specific war cases. Geopolitical aspects of military conflicts. ● War as a discourse. Features of the hybrid war concept. Dominant discourses of hybrid warfare. ● Hybrid warfare technologies. Information war as a component of hybrid war. ● War, military mobilization and service in the army in the mass consciousness (according to sociological research). ● Mobilization practices of patriotism in modern society.
Why is it interesting	Sociology of war is an extremely theoretically and practically relevant branch of modern research. War is the most acute form of conflict that accompanies humanity throughout the entire period of its existence. The means of warfare are constantly being improved, increasing the number of victims on the planet, putting into question the survival of human civilization in our time. This discipline is designed to give an idea of the key discourses and mobilization practices of war, to form an idea of possible scenarios for the settlement and prevention of military conflicts in the future.
Why you can learn (learning outcomes)	Practical skills in the analysis of military conflicts on the example of specific cases, to get acquainted with modern theories of wars, the specifics of the work of a sociologist in the conditions of a military conflict.
How to use acquired knowledge and skills (competencies)	Students will be able to research, evaluate the causes of social consequences of political and academic discourses of war, conduct an independent analysis of the course of military conflicts, give recommendations for their settlement and prevention. These competences can be useful in working in the public service, in international human rights and humanitarian organizations, foundations, political parties, etc.
Information support	Study program of discipline, Syllabus, Rating System, electronic notes of lectures, presentations of lectures and practical classes.
The form of classes	Lectures, presentations, analysis of specific cases, practical classes (discussions, public speeches, presentations).

Discipline	Academic writing and critical thinking
Level of higher education	Second (master's)
Year of training, semester	First year, 2nd semester
Scope of the discipline	5 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours
Language of teaching	English
Department	Sociology FSL
Lecturer	Associate Professor, Doctor of Philosophy . Tetiana V. Kolomiets
Requirements for starting studies	
What will be studied	<ul style="list-style-type: none"> – basic components of critical thinking ; – concepts of academic writing, academic text; – peculiarities of working with academic texts; – concepts, dimensions of academic integrity; – principles of use in communication and written communication in scientific discourse
Why is it interesting	<p>Completing the course will provide an opportunity to find answers to urgent questions:</p> <ul style="list-style-type: none"> - How does critical thinking affect cognitive development? - How does time management contribute to the effective organization of scientific work? - Is unity of form and content important for a scientific article? - the commercialization of science threaten the principles of academic integrity?
Why you can learn (learning outcomes)	<p>Knowledge of the concepts and categories of “academic writing”; “critical thinking”, “academic culture”, “academic integrity”;</p> <ul style="list-style-type: none"> – Knowledge of the basic principles and principles of the functioning of higher education and science as a system of knowledge , a social institution and a sphere of cognitive activity; – Knowledge of types and genres of academic texts; – Ability to conceptualize concepts in academic texts, formulate conclusions of scientific work; – Ability to present and present research results; – The ability to publicly defend the results of one's own academic activity.
How to use acquired knowledge and skills (competencies)	<p>Masters will acquire such competencies</p> <ul style="list-style-type: none"> • the ability to critically evaluate and rethink the accumulated experience (own and others), to analyze os professional and social activities taking into account the principles of academic culture and academic integrity; • the ability to critically evaluate and rethink the accumulated experience (own and others), to analyze professional and social activities based on the principles of academic culture; • the ability to act on the basis of professional and ethical considerations (motives);
Information support	Syllabus , curriculum of the discipline, lecture notes, cases.

The form of classes	Lectures, seminars, discussions, work with cases.
Semester control	Exam

Discipline	Contemporary Sociological Theories
Level of Higher Education	Second (Master's)
Course / Year of Education	2, 3
ECTS	5 credits: Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours
Language of Instruction	English
Department	Sociology Department, Faculty of Sociology and Law
Instructor	Professor, doctor of sociological sciences Pavlo Fedorchenco-Kutuev
Prerequisites	Knowledge of classical and modern sociological theories, social theories of modernity and modernization
Issues to be covered within the course / What will be studied	<ul style="list-style-type: none"> – Major research programs within contemporary sociological discourse; – Methodological assumptions of contemporary sociological theories; – Typology of strands within contemporary sociological theories; – The links between contemporary sociological theories and other levels of sociological discourse as well as other social science disciplines (political science, political economy); – Contemporary sociological theories and their applications in modern society.
Why should it be studied / Why is it interesting?	One of the greatest social thinkers John Maynard Keynes once remarked that it's incredible how we are guided by outmoded ideas of thinkers who are not even with us. Thus, it's very important to have a firm understanding of contemporary theorizing in sociology which often shapes our perception and actions in the modern world.
Learning outcomes	<p>Knowledge of</p> <ul style="list-style-type: none"> – The major strands in contemporary sociological theorizing; – The fundamental knowledge of the structure of contemporary sociological theories; – Relationship between sociological discourse and policy making in the realm of development and modernization; – Modernity as the major issue of contemporary sociological theorizing. <p>Skills</p> <ul style="list-style-type: none"> – To make use of the theoretical knowledge to analyze societal dynamics caused by radical social changes; – To assess the validity of existing scientific research programs within contemporary sociological discourse; – To identify and analyze conflicts within major spheres of modernity, that of capitalist economy and nation state; <p>Experience</p> <ul style="list-style-type: none"> – Group discussions on major conflicts of the modernity; – Analysis of major scientific programs in contemporary sociological theorizing and presenting results of these inquiries; – Application of the major concepts of the contemporary sociological theorizing to the analysis of the practical policy-making.
Competences and their practical use	Students will develop the ability to identify and make use of major strands in contemporary sociological theorizing to analyze the most pressing issues and conflicts of the modern society.
Information support	Syllabus, working program of the course, teaching manuals, moodle.

Forms of classes	Lections, seminars, discussions
Final semester control	Exam

Discipline	Global Politics
Level of Higher Education	Second (Master's)
Course / Year of Education	2, 3
ECTS	4 credits: Lectures – 18 hours, seminars – 36 hours, independent work – 66 hours
Language of Instruction	English
Department	Sociology Department, Faculty of Sociology and Law
Instructor	Professor, doctor of sociological sciences Pavlo Fedorchenko-Kutuev
Prerequisites	Knowledge of political science, classical and modern sociological theories, social theories of modernity and modernization
Issues to be covered within the course / What will be studied	<ul style="list-style-type: none"> - The nature of the global political system; - Relationship between global, international, national, regional and local; - Major theories of international relations; - Military power, hard power, soft power; - Nation state and globalization; - Development and underdevelopment; - The West versus the Rest.
Why should it be studied / Why is it interesting?	Globalization has long become a shibboleth of media and social sciences. Yet, we often lack analytical understanding of this phenomenon. It's often used as a self-explanatory notion but, in fact, it requires rigorous explanation in itself. Thus, it's important to understand inter-connectedness of the contemporary world and how it works.
Learning outcomes	<p>Knowledge of</p> <ul style="list-style-type: none"> - The major strands in contemporary international relations theory; - The fundamental knowledge of the structure of contemporary world politics; - Relationship between sociological discourse and international relations theory and international political economy; - * The logic of the rise and the fall of great powers. <p>Skills</p> <ul style="list-style-type: none"> - To make use of the theoretical knowledge to analyze international relations; - To assess the validity of existing paradigm in the international relation theory; - To identify and analyze conflicts causes of major interstate conflicts; <p>Experience</p> <ul style="list-style-type: none"> - Group discussions on major global and international conflicts; - Analysis of major paradigms in international relations theory and presenting results of these inquiries; - Application of the major concepts of the contemporary sociological theorizing on globalization and international relations theory to the analysis of the foreign policy-making.
Competences and their practical use	Students will develop the ability to identify and make use of major strands in contemporary international relations theory to analyze the most pressing issues and conflicts of the modern globalized society.
Information support	Syllabus, working program of the course, teaching manuals, moodle.
Forms of classes	Lections, seminars, discussions

Final semester control	Test
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Discipline	Social Network Analysis (SNA)
Level of Higher Education	Second (master's)
Course / Year of Education	2, 3
ECTS	4 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 66 hours
Language of Instruction	English
Department	Sociology FSP
Instructor	Professor, doctor of pedagogy, Lyubov Feliksivna Panchenko
Prerequisites	Basic knowledge and skills in statistical methods of data analysis, general sociology, methodology and methods of sociological research
Issues to be covered within the course / What will be studied	<ul style="list-style-type: none"> - areas of analysis of social networks in social and behavioral sciences, public administration, economics, etc - network data - presentation of social networks in the form of graphs and matrices - measurement of networks (calculations of the parameters of individual nodes, the network as a whole) - structural analysis (detection of clicks, components, bridges, etc.) - computer technologies for analysis and visualization of social networks (Gephi, R packages, NetLogo models)
Why should it be studied / Why is it interesting?	Because the demand for the ability to analyze and interpret social media data focused on various subject areas such as sociology, anthropology, social communications, health care, political science, public administration, marketing, economics, psychology, education, criminology, etc. continues to grow . Research covers micro-, meso- and macro-levels of analysis: personal systems of social and medical security; groups of children, pupils, students; behavior of neighbors, community participation; collectives of enterprises, voluntary associations, public movements, military platoons, terrorist cells, the main directions of international relations: trade, aid, war and peace.
Learning outcomes	<ul style="list-style-type: none"> - comprehensively understand network phenomena, focusing on the networks of schools, universities, firms, organizations, historical events, economic transactions, online communities, epidemiology, etc. - use computer environments Gephi, R, etc. to analyze network data
Competences and their practical use	<ul style="list-style-type: none"> - create models of networks and processes that take place there, study their statistical and structural properties, the interrelationship of actors, predict the behavior of networks, which is determined by changes in structural properties. - freely navigate computer tools for analyzing social networks - apply acquired knowledge to analyze network data in future professional and scientific activities - understand trends in the development of social networks
Information support	Навчальна програми дисципліни, силабус, комп'ютерний практикум, презентації лекцій
Forms of classes	Лекції, комп'ютерний практикум
Final semester control	Залік

Discipline	Creation and development of IT products
Level of higher education	Second (master's)
Year of training, semester	2, 3
Scope of the discipline	4 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 66 hours
Language of teaching	English
Department	Management theories and practices
Lecturer	Arkhipova Yevgenia Oleksandrivna, Doctor of Philosophy, Associate Professor, Associate Professor of TPU Department
Requirements for starting studies	Basic knowledge of the English language.
What will be studied	Students will familiarize themselves with the essence of product IT, types of IT products, tasks and functions of product managers. the decision-making process in the field of IT products; key metrics, user behavior in IT; the process of finding ideas and developing an MVP, the basics of product analytics and marketing.
Why is it interesting	The course is an educational franchise from leading specialists in the field of IT products and involves a virtual internship in an IT company to familiarize yourself with the tasks and functions of product managers. If you want to develop product and entrepreneurial thinking, have the desire and ideas to create an IT startup, but don't know where to start, or just want to learn more about the IT product field - we invite you to this course.
Why you can learn (learning outcomes)	Students will know: <ul style="list-style-type: none"> - stages of creation and development of IT products, as well as criteria by which their success is determined; - structure of product teams of IT startups, roles of specialists in the team; - who is a product manager, his main functions during development - product, aspects of interaction and management in product companies; - what is a minimum viable product, what are the methods of validating ideas and how to work with hypothesis testing; - basic concepts of marketing in the field of product IT, methods of research and influence on the target audience of the product; - peculiarities of work of the technical and non-technical component of the product team, aspects of application of programming languages depending on the product.
How to use acquired knowledge and skills (competencies)	Competencies at the level of trainee product manager. The acquired knowledge and skills will come in handy when creating your own startup project in the field of IT products.
Information support	The working program of the educational discipline (syllabi), RSO, text notes, terminological dictionary, infographics.
The form of classes	Video lectures, practical classes, screencasts, online simulator, case studies.
Semester control	Test

Discipline	Machine learning
Level of higher education	Second (master's)
Year of training, semester	2, 3

Scope of the discipline	4 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 66 hours
Language of teaching	English
Department	Applied mathematics
Lecturer	Professor, Ph.D. Chertov Oleg Romanovych
Requirements for starting studies	Basic knowledge of probability theory and mathematical statistics, Python programming, computer analysis of social information and data visualization, methods of multivariate analysis in sociology, big data analysis and artificial intelligence.
What will be studied	<ul style="list-style-type: none"> - Classification metrics. - Decision trees. - Metric methods of classification and regression. - Bayesian methods. - Clustering. - Selection and synthesis of informative characteristics (reduction of dimensionality). - Combination of models.
Why is it interesting	The study of machine learning is of significant and practical interest to sociology students for several reasons: it will help them understand how to effectively analyze, process, and use survey results, social media data, demographic statistics, etc. to obtain valuable information, in particular, to identify complex dependencies and implicit relationships between various social factors that will allow to understand and explain social phenomena; will provide a toolkit for predicting and understanding social behavior, for example, predicting election results, economic development, changes in public sentiment, etc.
Why you can learn (learning outcomes)	Knowledge of the theoretical foundations of controlled and unsupervised machine learning; selection and adjustment of machine learning models for specific tasks of sociology, in particular, adjustment of hyperparameters of models to achieve optimal performance; solving classic machine learning problems (classification, regression, clustering, forecasting); evaluating the effectiveness of machine learning models and interpreting their results from a sociological perspective.
How to use acquired knowledge and skills (competencies)	After mastering this discipline, students will expand their analytical and research skills and capabilities, will be able to use machine learning to analyze large volumes of social data, such as surveys, social media, text archives, etc., in particular, they will be able to identify hidden patterns in responses to questionnaire data, conduct analysis of the emotional coloring of messages in social networks, etc. The acquired knowledge will help students to develop predictive models for predicting social phenomena such as voting, consumer trends, social changes, etc. They will be able to apply regression, classification or clustering methods to analyze and predict social processes. Machine learning will provide a toolkit for social network research, students will be able to use clustering and community discovery algorithms to identify group structure, identify opinion leaders, analyze influence and spread information in social networks. These competencies will help students improve the quality of their research, expand the possibilities of social data analysis, and gain new insights into sociological phenomena.
Information support	Syllabus, RSO, lecture presentations and laboratory tasks, multimedia resources.
The form of classes	Lectures, laboratory works.
Semester control	Test

Discipline	Introduction to databases
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Level of higher education	Second (master's)
Year of training, semester	2, 3
Scope of the discipline	5 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 96 hours
Language of teaching	English
Department	Department of Applied Mathematics
Lecturer	Senior teacher, Ph.D.-M.Sc. Bai Yulia Petrovna
Requirements for starting studies	Basic knowledge of programming and computer analysis of information.
What will be studied	<ul style="list-style-type: none"> - Database concept and technology. Concept of database, data bank, database management system (DBMS). - Relational data model. Basic definitions. Interpretation of relations in the form of tables. Tabular representation properties. Definition of the concept of relation and its elements. Keys. - Normalization of relations, purpose and general characteristics of normalization steps. - SQL language (Structured Query Language). Data search using the select operator. - Sections (view). Adding, deleting and updating data in sections. - Transaction, its definition and purpose. Properties of transactions. Anomalies of parallel execution of transactions. Transaction isolation levels.
Why is it interesting	In most cases, structured data is stored precisely in databases and data warehouses, and therefore it is very important to understand their possible organization, presentation, access scheme, use and integrity assurance. After studying this discipline, students will be able to make basic queries to the database to obtain the necessary information without the help of IT specialists, which can significantly speed up the process of preparation and analysis of available sociological and related data.
Why you can learn (learning outcomes)	Knowledge of the relational data model; practical skills and skills in performing normalization of relations and building queries to the database management system in the SQL language.
How to use acquired knowledge and skills (competencies)	After mastering this discipline, students will have the ability to understand the concept of databases (the student will be able to recognize the basic concepts related to databases, such as entities, attributes, relations, primary key, foreign key, etc.) and the structure of relational databases and their use for efficient storage and data organization; skills in using the language of structured queries (the student will be able to use the SQL language to retrieve data from the database, perform such basic operations as data selection, sorting, merging, grouping, filtering, etc.); the ability to understand the concept of data security (the student will know the basic principles of data security and measures necessary to protect databases from unauthorized access, data loss and other threats).
Information support	Syllabus, RSO, lecture presentations and laboratory assignments, multimedia resources.
The form of classes	Lectures, laboratory works.
Semester control	Exam

Discipline	Legal provision of the Internet of Things in the conditions of European integration
Level of higher education	Second (master's)

Year of training, semester	2, 3
Scope of the discipline	4 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 66 hours
Language of teaching	English
Department	Information, economic and administrative law, FSP
Lecturer	Doctor of Law, Professor Oleksandr Andriyovych Baranov
Requirements for starting studies	General understanding of information law issues, understanding of the basics of information security.
What will be studied	In this course, we analyze approaches and formulate legal issues related to the development of the information infrastructure of the Internet of Things, the use of artificial intelligence and robots, autonomous cars, ships and drones, with the use of smart contracts, explore the features of personal data protection, issues of cybersecurity, determination of legal responsibility, etc.
Why is it interesting	The purpose of the academic discipline is to form students' theoretical and practical skills in applying the best practices of the European Union regarding the effective legal regulation of the use of the Internet of Things (IR, Internet of Things, IoT), improving legal culture and erudition
Why you can learn (learning outcomes)	Students gain knowledge and practical skills: The ability to apply special knowledge about new legal models in the process of using digital technologies, artificial intelligence aimed at automation, robotics and the provision of other benefits to humanity. They will acquire the ability to analyze and evaluate the impact of Conventions, Policies and standards of EU countries for the adaptation and formation of national policies and strategies. They will deepen the ability to make decisions in situations that require a systematic, logical and functional interpretation of legal norms, as well as an understanding of the peculiarities of the practice of their application in the regulation of relations, which are indirectly carried out using Internet of Things technologies.
How to use acquired knowledge and skills (competencies)	Acquired knowledge and skills can be implemented by students during work and consulting clients, both individual entrepreneurs — direct developers of IT solutions, and legal entities — customers or owners of property rights.
Information support	The working program of the academic discipline (syllabus), RSO, presentations of lectures
The form of classes	Lectures, practical classes.
Semester control	Test

Discipline	Information rights and human freedoms in Ukraine
Level of higher education	Second (master's)
Year of training, semester	2, 3
Scope of the discipline	4 ECTS credits: Lectures – 18 hours, seminars – 36 hours, independent work – 66 hours
Language of teaching	English
Department	Intellectual property and private law
Lecturer	candidate of legal sciences, associate professor Ihor Oleksiyovych Shumak
Requirements for starting studies	Knowledge of constitutional law, information law

What will be studied	Concept, essence, signs of informational rights and freedoms of a person and a citizen. Principles of informational rights and human freedoms. System of informational rights and human freedoms. General guarantees of informational rights and freedoms of a person and a citizen. Special guarantees of informational rights and freedoms of a person and a citizen. International protection of informational rights and human freedoms. Modern trends in the development of the system of informational rights and human freedoms.
Why is it interesting	The extremely rapid progress of scientific and technical progress, which leads to the appearance of new dangers in the sphere of guaranteeing the personal informational rights of a person and a citizen. There is a need to adopt better European experience and bring domestic legislation into compliance with international legal standards. In addition, there is a need for a clear definition of the content of the concept of these constitutional human rights, their structural elements and forms of manifestation, and the need for a deep scientific analysis of the limits of possible intervention by the state and society in the sphere of personal information life.
Why you can learn (learning outcomes)	Assess the reliability of information and the reliability of sources, effectively process and use information for conducting scientific research and practical activities. Generate new ideas and use modern technologies in the provision of legal services. Analyze and evaluate the practice of application of individual legal institutions. Use advanced knowledge and methods in the process of law-making and law enforcement of law institutions.
How to use acquired knowledge and skills (competencies)	Ability to search, process and analyze information from various sources. Ability to make informed decisions. Ability to communicate with representatives of other professional groups at different levels (with experts from other fields of knowledge/activities). Ability to abstract thinking, analysis and synthesis.
Information support	Syllabus
The form of classes	lectures, practical classes (problematic presentation of the material, discussion, cases, testing, problem solving, express survey), Zoom, GoogleClassroom
Semester control	Test