Researching and Writing a Master's Thesis

Work programme for the academic discipline (syllabus)

Course details

Level of higher education	Second (Master's)
Field of knowledge	C – social sciences, journalism, information and international relations
Specialisation	C5 Sociology
Educational programme	Social Data Analytics
Status of discipline	Mandatory
Form of study	Full-time (day)
Year of study, semester	2nd year, 1st semester
Scope of the discipline	4.0 ECTS credits/120 hours: lectures – 16 hours, seminars – 30 hours, independent work – 74 hours.
Semester assessment/assessment measures	Exam, Modular control work
Class schedule	https://schedule.kpi.ua/
Language of instruction	Ukrainian
Information about the course leader/teachers	Lecturer and practical classes: Associate Professor, Candidate of Philosophical Sciences, Associate Professor, Ihor Viktorovych Pyholenko, e-mail: pigolenko@gmail.com
Course location	Link to the Moodle distance learning resource: https://do.ipo.kpi.ua/course/view.php?id=8049

Curriculum

1. Description of the academic discipline, its purpose, subject matter and learning outcomes

Secondary, master's level higher education involves writing and defending a qualification paper – a master's thesis. A necessary prerequisite for the successful writing and defence of a master's thesis is the ability and skills to conduct independent scientific research. The results of such research should be an integral and essential part of the entire final work of the master's student.

The course "Scientific Research on the Topic of a Master's Thesis" provides an opportunity to gain a clear understanding of the requirements and methodology of conducting scientific research, prepares master's students for independent research and writing scientific papers, primarily master's theses. This discipline is an important part of the study of professionally-oriented disciplines of the research (scientific) component. It lays the foundation for future sociologists to gain in-depth knowledge of the methodology and organisation of sociological research for their further application in practical activities as postgraduate students, sociology teachers, research assistants, and experts.

Competencies acquired during the study of the discipline:

General competencies:
- Ability to work autonomously (GC 02)

Professional competencies:
- Ability to design and conduct sociological research, develop and justify its methodology (PC 03)
- Ability to collect and analyse empirical data using modern methods of sociological research (PC 04)
- Ability to adhere to the norms of professional ethics of a sociologist and be guided by universal human values (PC 06)
- Ability to present the results of scientific research and prepare scientific reports and publications (FC 10)

Programme learning outcomes:
- Apply scientific knowledge, sociological and statistical methods, digital technologies, and specialised software to solve complex problems in sociology and related fields of knowledge (PR04)
- Search for, analyse and evaluate necessary information in scientific literature, databases and other sources (PR05)
- Resolve ethical dilemmas in accordance with the norms of professional ethics of a sociologist and universal human values (PR07)
- Plan and carry out scientific research in the field of sociology, analyse results, justify conclusions (PR09)
- Summarise the results of their own scientific research and present them in scientific reports and publications (PR11).

2. Prerequisites and post-requisites of the discipline (place in the structural-logical scheme of training under the relevant educational programme)

Prerequisites. For successful mastery of the discipline, students must complete training in the following academic disciplines: "Analytical Sociology and Social Behaviour: Contemporary Approaches," "Methodology and Methods of Sociological Research in the Digital Age." In addition, it is also desirable to have basic skills in working with specialised software for processing and analysing quantitative social information (e.g., OSA, PSPP, R) and with sociological data archives (e.g., the National Bank of Sociological Data "Kyiv Archive").

Post-requisites. After completing the course "Research work on the topic of the master's thesis," students will be able to perform research tasks within the educational component "Completion of the master's thesis."

The knowledge, skills and abilities acquired during the study of this discipline can be successfully applied in the mastery of other specialised and industry-specific sociological disciplines.

3. Contents of the academic discipline

Topic 1. Concepts, structure and types of scientific research.
Topic 2. The problem of truth and the structure of scientific knowledge.
Topic 3. The concept of "knowledge" and approaches to its analysis
Topic 4. General scientific methods: classification.
Topic 5. Methodology of sociological research
Topic 6. Basic rights and obligations of students in preparing a master's thesis
Topic 7. Choosing a research topic and determining its relevance.
Topic 8. Critical thinking and academic integrity
Topic 9. Use of artificial intelligence (AI) in scientific research
Topic 10. Writing a master's thesis: stages of preparation, formatting requirements.
Topic 11. Introduction to a master's thesis and its main components.
Topic 12. Principles of working with sources.
Topic 13. Generalisation of scientific research results and forms of its testing
Topic 14. Preparing a presentation and defending a master's thesis

4. Teaching materials and resources

4.1. Basic literature:

1. Babichenko, A. K. Fundamentals of Scientific Research: A Textbook for Students of Higher Education Institutions / edited by A. K. Babichenko. Ministry of Education and Science of Ukraine, Ministry of Health of Ukraine, National Technical University "Kharkiv Polytechnic Institute", National Pharmaceutical University. Kharkiv: Madrid Printing House, 2021. 133 p.
2. Berko, A. Yu. Organisation of scientific research, writing and defence of a master's thesis: a textbook / A. Yu. Berko, Ye. V. Burov, O. M. Veres, A. V. Katrenko [and 3 others] Ministry of Education and Science of Ukraine. Lviv: Novyi Svit-2000 Publishing House, 2025. 280 p.
https://opac.kpi.ua/F/?func=direct&doc_number=000647998&local_base=KPI01
3. Research Design: Approaches Based on Qualitative, Quantitative, and Mixed Methods / trans. Igor Kobel, Taras Kobel. Lviv: Ukrainian Catholic University Publishing House, 2022. 284 p.
4. Kyslyi, V. M. Organisation of scientific research: a textbook for students of higher education institutions. Sumy: University Book, 2023. 223 p.
5. Master's Thesis: Recommendations for Structure, Content, Organisation of Implementation and Defence [Electronic resource]: textbook for master's degree candidates in the field of C5 Sociology / Igor Sikorsky Kyiv Polytechnic Institute; comp.: I. V. Pyholenko, T. V. Kolomiyets. – Electronic text data (1 file). – Kyiv: Igor Sikorsky Kyiv Polytechnic Institute, 2025. – 81 p. URL: https://ela.kpi.ua/server/api/core/bitstreams/e9aa25e9-39e3-4269-a321-5ec485ebb4ee/content

4.2. Supplementary literature

1. Bodrov, V. G. Methodological and instrumental support for scientific research: textbook / V. G. Bodrov, L. L. Lazebnik, S. V. Onyshko, V. A. Rozhko, O. A. Shevchuk; edited by O. A. Shevchuk; University of the State Fiscal Service of Ukraine. - Irpin: University of the State Fiscal Service of Ukraine, 2020. - 323 p.
https://opac.kpi.ua/F/?func=direct&doc_number=000629207&local_base=KPI01
2. Braslavska, O.V. Organisation of scientific research in the context of digital transformation: methodological approaches and prospects for application / O.V. Braslavska // Prospects and Innovations in Science (Series "Pedagogy", Series "Psychology", Series "Medicine"). - 2025. - No. 6. - P. 181-192. - Access mode: http://nbuv.gov.ua/UJRN/prainnsc_2025_6_17
3. Vasilenko N. V. Artificial intelligence and academic integrity: the formation of ethical norms in the digital environment / N. V. Vasilenko // Society and National Interests. - 2025. - No. 7. - P. 306-313. - Access mode: http://nbuv.gov.ua/UJRN/scntint_2025_7_26
4. Vykhrushch, V. O. Methodology and methods of scientific research: textbook / V. O. Vykhrushch, Yu. M. Kozlovsky; Ministry of Education and Science of Ukraine, Lviv Polytechnic National University. - Lviv: Lviv Polytechnic Publishing House, 2020. - 335 p.
https://opac.kpi.ua/F/?func=direct&doc_number=000634076&local_base=KPI01
5. Halkiv, L. I. Organising and conducting scientific research: 1001 tests for master's students: special course for specialities 051 "Economics" and 073 "Management": textbook / L. I. Halkiv, O. B. Mrykhina; Ministry of Education and Science of Ukraine, Lviv Polytechnic National University. - Lviv: Raster-7, 2021. - 197 p.
https://opac.kpi.ua/F/?func=direct&doc_number=000635630&local_base=KPI01
6. Code of Ethics for Scientists of Ukraine. URL: http://www.inem.lviv.ua/wp-content/uploads/2013/03/ekuu.pdf.
7. Kalita N. I. Academic integrity in the modern educational space / N. I. Kalita // Prospects and innovations in science (Series "Pedagogy", Series "Psychology", Series "Medicine"). - 2025. - No. 7. - P. 416-422. - Access mode: http://nbuv.gov.ua/UJRN/prainnsc_2025_7_37
8. Code of Professional Ethics for Sociologists. URL: https://sau.in.ua/pro-sau.
9. Comprehensive measurement tools in sociological research: development, adaptation, validity justification [Ye. Golovakha, S. Dembitsky, N. Panina et al.]; edited by Ye.

Golovakha and S. Dembitsky. Kyiv. Institute of Sociology of the National Academy of Sciences of Ukraine. 2022. 405 p.

10. Konversky, A. E. Critical thinking: a textbook for students of higher education institutions of all specialities / A. E. Konversky; Ministry of Education and Science of Ukraine; Taras Shevchenko National University of Kyiv. - Kyiv: Centre for Educational Literature, 2022. - 362 p. https://opac.kpi.ua/F/?func=direct&doc_number=000642398&local_base=KPI01

11. Kostin, Yu. D. Theory and Methodology of Scientific Research: A Textbook for Students (Master's Degree) of All Forms of Education / Yu. D. Kostin, T. V. Polozova, I. A. Sheiko, D. Yu. Kostin; Ministry of Education and Science of Ukraine, Kharkiv National University of Radio Electronics. - Kharkiv: KNURE, 2021. - 152 p. https://opac.kpi.ua/F/?func=direct&doc_number=000634072&local_base=KPI01

12. Lahodienko V. V. Choosing a scientific research methodology / V. V. Lahodienko, L. V. Ivanchenkova, O. V. Lahodienko // State and Regions. Series: Economics and Entrepreneurship. - 2022. - No. 3. - P. 4-9. - Access mode: http://nbuv.gov.ua/UJRN/drep_2022_3_3

13. Litvinov A. S. The use of artificial intelligence in education and scientific research by higher education students / A. S. Litvinov // Prospects and Innovations in Science (Series "Pedagogy", Series "Psychology", Series "Medicine"). - 2025. - No. 1. - P. 651-663. - Access mode: http://nbuv.gov.ua/UJRN/prainnsc_2025_1_58

14. Medvid, V. Yu. Methodology and organisation of scientific research (in structural-logical diagrams and tables): textbook / V. Yu. Medvid, Yu. I. Danko, I. I. Koblianska. - Sumy: University Book, 2020. - 218 p. https://opac.kpi.ua/F/?func=direct&doc_number=000629382&local_base=KPI01

15. Novikova N. Methodology as a theoretical model of scientific research / N. Novikova // European scientific journal of economic and financial innovation. - 2025. - No. 2. - P. 414-420. - Access mode: http://nbuv.gov.ua/UJRN/esjefi_2025_2_40

16. Pygolenko I. V., Yenin M. N. Programme of sociological research // Great Ukrainian Encyclopaedia. URL: https://vue.gov.ua/Програма sociological research (date of access: 1.05.2025).

17. Hume, M. Knowledge. Reality. Value: An Introduction to Analytical Philosophy for Almost Everyone / translated from English by M. E. Bystritsky. Kyiv: Nash Format, 2024. 404 p.

18. Heiber, Jonathan. Critical Thinking / Jonathan Heiber; translated from English by Oleksandra Boichenko; illustrations by Viktor Kudin. - Kyiv: ArtHuss Publishing House, 2023. - 198 p. https://opac.kpi.ua/F/?func=direct&doc_number=000646981&local_base=KPI01

19. Shynkaruk, O. V. Academic integrity as a component of the academic culture of participants in the educational and scientific process / O. V. Shynkaruk // Humanitarian studios: pedagogy, psychology, philosophy. - 2023. - Vol. 14, no. 2. - P. 107-114. - Access mode: http://nbuv.gov.ua/UJRN/hst_2023_14_2_15

20. Shulsky M. G. The essence of methodological approaches in scientific research / M. G. Shulsky // Scientific notes [of the Ukrainian Academy of Printing]. - 2024. - No. 1. - P. 269–283. - Access mode: http://nbuv.gov.ua/UJRN/Nz_2024_1_28

Educational content

5. Methodology for mastering the academic discipline (educational component)

Lectures

Lectures using informative and receptive methods, heuristic discussions, elements of educational discussion, elements of problem-based presentation of material.

Multimedia equipment and computers are used in classes. Distance learning uses Zoom and/or Google Meet video conferencing services, the Google Classroom educational web service on the Sikorsky platform, messengers for communication with students, and the university's Electronic Campus information and communication system software.

Lecture 1. Concepts, structure and types of scientific research.
The concept of scientific research. Basic principles of research work. The importance of personal motivation for researchers in writing high-quality scientific papers. The social significance of research activities for society as a whole. The practical value of skills acquired as a result of independent scientific work for the activities of a sociologist.
Assignment for independent study:
Find an article on the topic of your master's thesis in a scientific sociological journal. Analyse the example of a scientific publication and determine its type of research.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 18, 20.

Lecture 2. The problem of truth and the structure of scientific knowledge.
The concept of truth. The functions of truth in scientific knowledge. The problem of the existence of truth. Objectivism and relativism. Scientific truth and the problem of finding its criteria. Rational foundations of truth. Verification and falsification. Practice as a criterion of truth. Forms of truth. Truth and error. The dialectic of the development of scientific knowledge. Sensory knowledge and its elements. Rational cognition and its forms: a) concepts as the basic form of rational cognition; b) judgements and inferences; c) the role of categories in the functioning and development of rational cognition, thinking, and consciousness. The unity of sensory and rational cognition. Types of rationality in contemporary culture.
Assignment for independent study:
Find an article on the topic of your master's thesis in a scientific sociological journal. The article should contain the results of theoretical and applied research. Identify the essence of the scientific problem, the object and subject, the goal and objectives of the research, hypotheses and operational definitions of basic concepts.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 18, 20.

Lecture 3. The concept of "knowledge" and approaches to its analysis
Approaches to the analysis of the concept of "knowledge" (traditional method of analysis, theory of contestability, Gettier's approach, no false assumptions, reliabilism, proper functioning, tracking, contestability). The failure of analysis. Locke's theory of concepts. Wittgenstein's approach to concepts.
Assignment for independent study:
Draw up a classification scheme for knowledge. Compare the concepts of "knowledge" and "information".
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 17, 18.

Lecture 4. General scientific methods: classification.
Concepts and criteria for classifying general scientific methods. Theoretical and empirical research methods. General scientific theoretical methods of scientific research. Systemic method. Historical method. Method of analysis and synthesis. Method of deduction and induction. Theoretical methods specific to the study of social phenomena.
Assignment for independent study:
Consider within which (possibly several) sociological paradigms you plan to conduct scientific research that will form the basis of your master's thesis. Justify your choice.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Lecture 5. Choosing a research topic and determining its relevance.
Types of student research papers. Recommended topics, topics freely chosen by students. Criteria for choosing a topic. The student's personal interest, benefit for future professional activity. The existence of a problem (unresolved issues, unregulated relations, conflicts in legislation, etc.). The social importance of the chosen topic. Degree of scientific development, availability of literature. The student's level of familiarity with the topic. Feasibility of conducting research according to the schedule for completing scientific work.
Assignment for independent work:
Describe the relevance of the topic of your master's thesis. Refer to related previous studies, statistical material, sociological observations, and other facts. Explain which social problem your research is aimed at solving.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Lecture 6. The use of artificial intelligence (AI) in scientific research
Retrospective analysis (search for sources, their brief description, systematisation) on a specific issue. Generation of ideas (for selecting potential directions, methods, techniques, methodologies, research tools, etc.). Search for prototypes and/or analogues for inventions (e.g., for patents). Search for necessary statistical data, data analysis and identification of patterns (in particular, connections) in BigData. Analysis (expertise, criticism) of the novelty/similarity/differences/limitations of scientific results (propositions, hypotheses, concepts, models). Analysis and/or modelling of risks/reliability/safety of invention application. Automation of routine tasks to increase the productivity of scientists and improve the quality of scientific publications.
Task for independent work:
Formulate a prompt (prompt engineering) for your master's thesis topic. Compare the AI results with your findings.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 3, 5, 9, 11, 12, 13.

Lecture 7. Writing a master's thesis: stages of preparation.
Stages of work on a master's thesis. The role of planning in the process of writing a master's thesis. Choosing a topic for a master's thesis. Gathering material. Requirements for drawing up a detailed work plan. Note-taking. Features of working on the applied section of a master's thesis. Formatting a master's thesis. Review and requirements for writing it. Report, types and requirements for preparation.
Assignments for independent work:
Develop a detailed schedule for working on your master's thesis. Explain each point of the plan.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Lecture 8. Principles of working with sources.
The quality of scientific sources used by students when writing papers. Monographs, articles in scientific journals, textbooks, articles in general-practical sociological publications, results of sociological surveys and studies, conference reports, news and press releases. The concept and types of plagiarism. Academic ethics. Determining the quality of Ukrainian sources: list of officially approved professional publications, websites of individual journals. Determining the quality of foreign sources: rating of English-language publications. Stages of working with literature. Searching; systematising and storing information; summarising; compiling a bibliography. Full-text material databases. Liga-Zakon database, scientific electronic library of periodicals of the V. Vernadsky Library, electronic catalogues of other libraries, Internet search using GOOGLE SCHOLAR. Systems for storing and summarising information using Word, OneNote, and EverNote. Rules for formatting references and bibliographies and their use in student research work.
Assignments for independent study:
Familiarise yourself with one of the examples of an innovative project for collecting and analysing sociological information. Find an Internet resource that can be used to create web questionnaires. Familiarise yourself with its capabilities and limitations. Select one study on the website of the National Bank of Sociological Data "Kyiv Archive" that is similar in topic to your master's thesis. Download the array and methodological documentation. Familiarise yourself with the subject matter and variables of the selected study. Formulate several explanatory (causal) hypotheses and verify them using PSPP.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Seminar (practical) classes

The main objectives of the seminar cycle are to develop knowledge, skills and experience in choosing a research topic, justifying its novelty and relevance; determining the object, subject, purpose and objectives of the research; developing the structure of scientific work; presenting and formalising the results of the research.

Didactic methods, observation and comparison, generalisation and abstraction, analogy, induction, deduction, analysis and synthesis, analytical-synthetic, abstract-deductive, concrete-inductive, explanatory-illustrative, reproductive, partial-search, research methods are used.

Seminar 1. Concepts, structure and types of scientific research.
The concept of scientific research. Basic principles of research work. The importance of personal motivation for researchers in writing high-quality scientific work. The social significance of research activities for society as a whole. The practical value of skills acquired as a result of independent scientific work for the activities of a sociologist. Foreign experience in teaching the basics of scientific research and critical thinking. The task of raising the level of domestic scientific research.
1. What is scientific research and what are its main features?
2. What are the structural elements of scientific research?
3. What is the difference between fundamental and applied research?
4. How is scientific research classified according to methodological characteristics?
5. What is the role of empirical and theoretical components in research?

Find an article on the topic of your master's thesis in a scientific sociology journal. Analyse the example of a scientific publication and determine its type of research.
Assignment for independent study:
Analyse an example of a scientific publication and determine its type of research.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 18, 20.

Seminar 2. The problem of truth and the structure of scientific knowledge.
1. What is scientific truth?
2. What are the functions of truth in scientific knowledge?
3. Forms of truth?
4. What stages of scientific knowledge are distinguished in the philosophy of science?
5. How do verification and falsification affect the cognition of truth?

Assignment for independent study:
Find an article on the topic of your master's thesis in a scientific sociological journal. The article should contain the results of theoretical and applied research. Identify the essence of the scientific problem, the object and subject, the goal and objectives of the research, hypotheses and operational definitions of basic concepts.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 18, 20.

Seminar 3. The concept of "knowledge" and approaches to its analysis
1. How do philosophy and sociology interpret the concept of knowledge?
2. What types of knowledge exist?
3. What is the difference between intuitive, practical and scientific knowledge?
4. What are the modern approaches to the analysis of knowledge?
5. What role does knowledge play in the formation of scientific discourse?

Assignment for independent study:
Draw up a classification scheme for knowledge. Compare the concepts of "knowledge" and "information".
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 17, 18.

Seminar 4. General scientific methods: classification.
1. What are the classifications of general scientific methods?
2. What is the difference between empirical and theoretical methods?
3. How do induction and deduction work in scientific research?
4. What is the essence of the methods of analysis and synthesis?
5. How is the systematic approach applied in the social sciences?

Assignment for independent study:
Consider within which (possibly several) sociological paradigms you plan to conduct scientific research that will form the basis of your master's thesis. Justify your choice.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Seminar 5. Methodology of sociological research
Basic concepts of sociological research methodology. Three main paradigms of sociological research. Quantitative (positivist, statistical) paradigm. Qualitative (understanding, interpretative) paradigm. Critical

social science. Comparative characteristics of the three paradigms: the purpose of research, the nature of social reality and human beings, the relationship between science and common sense, the essence of explanation and theory, criteria for the truthfulness of knowledge, the place of values in scientific research.

1. What does the methodology of sociological research include?
2. What is a paradigm?
3. Quantitative paradigm.
4. Qualitative paradigm.
5. Critical social science.

Assignment for independent study:
Create a table entitled "Comparison of three paradigms of sociological research: quantitative, interpretive, critical."
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Seminar 6. Basic rights and responsibilities of students in preparing a master's thesis
1. What rights do students have in the process of writing a master's thesis?
2. What are the responsibilities of students during the preparation of a thesis as stipulated by the regulatory documents of higher education institutions?
3. What academic support opportunities are available to students?
4. How is interaction with the academic supervisor structured?
5. What are the possible consequences if a student violates academic integrity?

Assignments for independent study:
Why little attention is paid to the rights of master's students when preparing a master's thesis. Features of the interaction between a master's student and a thesis supervisor.
Literature: Main: 1, 2, 3, 4, 5; additional: 6, 7, 10, 11, 12, 14.

Seminar 7. Choosing a research topic and determining its relevance.
1. What are the criteria for choosing a research topic?
2. What is relevance and how can it be justified?
3. How is the topic related to the scientific field of study?
4. What mistakes are made when choosing a topic?
5. How to assess the novelty and practical significance of a topic?

Assignment for independent study:
Describe the relevance of the topic of your master's thesis. Refer to related previous studies, statistical material, sociological observations, and other facts. Explain which social problem your research is aimed at solving.
Literature: Main: 1, 2, 3, 4, 5; additional: 6, 7, 10, 11, 12, 14
, 9, 12

Seminar 8. Critical thinking and academic integrity
1. What is critical thinking and why is it important in science?
2. How does critical thinking help to avoid logical errors in research?
3. What is academic integrity and what are its principles?
4. What types of academic misconduct exist?
5. How can you check a text for plagiarism and what services are available?

Assignment for independent study:
What ways of preventing plagiarism in your work can you name? How does academic integrity differ from other types?
Literature: Main: 1, 2, 3, 4, 5; additional: 6, 7, 8, 10, 19.

Seminar 9. The use of artificial intelligence (AI) in scientific research
1. What are the main areas of AI use in scientific research?
2. How can AI help in processing and analysing large amounts of data?
3. What examples of AI applications in the social sciences, humanities, and natural sciences are you aware of?
4. What are the risks of using AI to generate texts or ideas in research (ethical, methodological, academic)?

5. How can AI tools (e.g., ChatGPT, Elicit, Semantic Scholar AI) be used in the preparation of a master's thesis?

Assignment for independent study:
Formulate a prompt (prompt engineering) for your master's thesis topic. Compare the AI results with your own work.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 3, 5, 9, 11, 12, 13.

Seminar 10. Writing a master's thesis: stages of preparation, formatting requirements.
1. What are the main stages of thesis preparation?
2. How long does each stage usually take?
3. How to plan your work on the thesis effectively?
4. What difficulties arise at different stages?
5. What role does a schedule play in writing a thesis?
6. What are the general requirements for formatting a dissertation?
7. How to format references and bibliography correctly?
8. What are the technical parameters of the document (font, margins, line spacing)?
9. How are tables, figures, and diagrams formatted?
10. What are the most common mistakes in formatting?

Assignment for independent study:
Think about the structure of your master's thesis. Could the material be structured differently? Why? Familiarise yourself with the template for formatting a master's thesis accepted at your higher education institution.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Seminar 11. Introduction to a master's thesis and its main components.
1. What elements should the introduction contain?
2. Formulation of relevance.
3. Definition of the object, subject, purpose and objectives of scientific research.
4. Formulation of the scientific question, its connection with the social problem that the research aims to solve.
5. Scientific novelty and practical significance of the results obtained.

Assignment for independent work:
Explain the relevance of the work. Compile a bibliography of the main sources of your master's thesis. Define the object, subject, purpose and objectives of your scientific research. Write an introduction to your future master's thesis.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Seminar 12. Principles of working with sources.
1. What sources are used in a master's thesis?
2. How is the search, selection and critical analysis of literature carried out?
3. What is a bibliographic reference and how is it formatted?
4. How to format citations in accordance with the requirements of academic writing?
5. What services and resources help to organise sources?

Assignment for independent study:
Familiarise yourself with one of the examples of an innovative project for collecting and analysing sociological information. Find an online resource that can be used to create web questionnaires. Familiarise yourself with its capabilities and limitations. Select one study on the website of the National Bank of Sociological Data "Kyiv Archive", download the array and methodological documentation. Familiarise yourself with the topics and variables of the selected study.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Seminar 13. Generalisation of the results of scientific research and forms of its testing
1. The concept of scientific publication and its main types.
2. Scientific article, requirements for its formatting.

3. Abstracts of reports, their structure.
4. Abstract: structure and algorithm for its preparation.
5. Review and requirements for its writing.

Assignments for independent study:
Find an English-language publication on the topic of your master's thesis in a foreign scientific journal. Write a 250-word summary of the article. Prepare a short (5-10 minute) oral presentation summarising the main points of the article and providing a critical analysis.
Literature: Main: 1, 2, 3, 4, 5; additional: 1, 4, 10, 11, 12, 14, 20.

Seminar 14. Preparation of a presentation and defence of a master's thesis
1. Types of reports
2. Report and preparation requirements.
3. Use of presentation software
4. Features of defending your work online

Assignment for independent study:
Describe the structure of an ideal presentation for defending a dissertation (indicate the key slides and their content). What are some common mistakes in slide design? Give examples and ways to correct them. How to prepare for questions from the committee? Make a list of potential questions for your topic and answers. Analyse an example of a successful defence (find it online or from experience) and indicate what makes it effective. Create a draft of 5 key slides for your dissertation (use PowerPoint or similar).
Literature: Main: 1, 2, 3, 4, 5; Additional: 1, 4, 10, 11, 12, 14, 20.

Seminar 15. Modular control work

6. Independent work of the student/postgraduate

Independent work of the applicant includes:
preparation for classroom sessions – 40 hours;
preparation for the modular control work– 4 hours;
preparation for the exam – 30 hours.
Total – 74 hours.
Questions for independent work for students are specified for each lecture and practical assignment.

Policy and control
7. Policy of the academic discipline (educational component)

Attendance and completion of assignments
Students who wish to demonstrate excellent learning outcomes are required to actively participate in lectures, but they are not required to make up for missed lectures.
Students will be required to actively participate in seminars. The student's rating will largely be based on the results of their work in seminars. Each missed practical class (regardless of the reason for the absence) lowers the student's final rating for the discipline.
Students who have missed practical classes can prevent their final rating from being lowered by working through the relevant topics in a timely manner (during the semester) and completing the assignments for the missed classes. There is no need to wait until the exam session to communicate with the teacher. This should be done as soon as the student is ready to demonstrate their knowledge and skills on the missed topics.
The topics and assignments for seminars are provided in the Syllabus, available from the student's personal account in the Moodle system.
Laptops and smartphones are allowed in lectures and seminars, but only for purposes related to the topic of the class and the relevant thematic assignment.

During practical classes, students may use their own written notes on the topic of the class (or the task), but reading from a piece of paper reduces the quality of the answer and the grade.

Informal education

At the request of the applicant, in conditions that do not facilitate regular attendance, it is permissible to study individual parts of the discipline in asynchronous mode, in particular through distance learning courses and other forms of informal learning. In order for the points for such courses to be taken into account in the rating system, they must correspond in content to certain topics of the syllabus, and their completion must be agreed with the teacher of the discipline. To confirm completion of informal learning, the student must provide a relevant document (certificate) indicating the name of the courses and their duration in hours. Recognition of the results of informal education takes place in accordance with the procedure set out in the relevant Regulations of Igor Sikorsky KPI: https://osvita.kpi.ua/node/179.

In particular, we recommend the online course "Sociology and Social Research: What, How, Why?" The course is available on the Prometheus educational platform at: https://apps.prometheus.org.ua/learning/course/course-v1:IRF+SOC101+2015_T1/home. Other massive open online courses (in whole or in part) may be used, provided that their topics and content are agreed upon with the lecturer.

University policy

Academic integrity
The policy and principles of academic integrity are defined in Section 3 of the Code of Honour of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". For more details, see: https://kpi.ua/code.

Standards of ethical conduct
The standards of ethical conduct for students and employees are defined in Section 2 of the Code of Honour of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". For more information: https://kpi.ua/code.

Artificial intelligence policy
The policy on the use of artificial intelligence and its principles are regulated by the order "Policy on the use of artificial intelligence for academic activities at Igor Sikorsky Kyiv Polytechnic Institute". For more information, please visit: https://osvita.kpi.ua/node/1225.

8. **Types of control and the learning outcomes assessment rating system (LOAS)**

Assessment and control measures

A student's rating consists of points they receive for:
1) answers in seminars;
2) presentation of their own scientific research as part of writing a master's thesis;
3) modular control work;
4) examination

1. Answers in seminars.
Weighting score – 2 points for answering one question. The maximum number of points for all seminars is equal to r_{sem} = 2 points*14 = 28 points.
For each question answered, the student receives:
– a complete answer (at least 90% of the required information) if the student demonstrates a deep knowledge of the material, presents it logically and consistently, gives reasoned conclusions, freely operates with specific data, and answers the questions easily and convincingly – 2 points;

– an incomplete answer (approximately 60–75% of the required information), inaccuracies are allowed, the answer is less consistent; the student answers some of the questions poorly or does not answer them – 1 point;

– no work in the seminar – 0 points.

2. Presentation of own scientific research as part of writing a master's thesis

Weighting – 12 points.

Assessment criteria:

- "excellent", the topic is fully covered (at least 90% of the required information), the work is written independently, meets the established requirements and is submitted on time – 11-12 points;
- "good", the topic is not fully covered (at least 75% of the required information), there are minor deviations from the established requirements, submitted on time – 9-10 points;
- "Satisfactory": the topic is poorly developed and/or there are significant deviations from the established requirements and/or the work was submitted with a significant delay – 7-8 points;
- "unsatisfactory", the work does not meet the requirements for 6 points – 0-6 points.

3. Modular control work

Weighting – 10 points.

Assessment criteria:

- "excellent", complete answer (at least 90% of the required information) to all questions of the modular control work; the student is well versed in the material presented – 9-10 points;
- "good", the student answered 75% of the questions in the modular control work; answers to all questions in the test require clarification – 7-8 points;
- "satisfactory", the student answered 60% of the questions in the modular control work; answers require significant clarification, insufficient knowledge of the material – 5-6 points;
- "unsatisfactory", the answer does not meet the requirements for 5 points, the student is not familiar with the material, extremely limited answer – 0 points.

Bonus points (no more than 10 points for all types of work):

for research activities (participation in conferences, "FSP Science Days", student competitions, publications);

participation in faculty competitions in academic disciplines and all-Ukrainian competitions.

4. Exam.

Weighting score – 50.

The exam involves oral answers to questions, a list of which is provided in Appendix 2.

Assessment criteria:

- 40-50 points – the student answers almost all exam questions, demonstrates in-depth knowledge of the material, presents it logically and consistently, gives reasoned conclusions, freely uses specific data, expresses their own position on controversial issues, demonstrates signs of theoretical thinking and sociological imagination;
- 30-39 points – the student answers most of the exam questions, demonstrates a good level of knowledge of the material;
- 20-29 points – the student answers about half of the exam questions, demonstrates rather superficial knowledge;
- 0-19 points – the student answers only some of the exam questions, does not have their own position, and makes significant inaccuracies.

Conditions for a positive interim assessment:

To receive a "pass" on the first interim assessment, the student must have at least 12 points; to receive a "pass" on the second interim assessment, the student must have at least 24 points.

Conditions for admission to the exam:

The condition for a student's admission to the exam is to receive a preliminary rating of at least 24 points.

Table of correspondence between rating points and grades on the university scale:

Rating of the applicant (points)	University scale of grades for the level of acquired competencies (learning outcomes)
100-95	Excellent
94	Very good
84	Good
74-65	Satisfactory
64-60	Sufficient
Less than 60	Unsatisfactory

Possible marks in the semester control report:

Not admitted	Failure to meet the conditions for admission to semester control
Removed	Violation of the principles of academic integrity or moral and ethical standards of conduct
Did not appear	The applicant was admitted but did not appear for the exam

Review of the rating system of assessment during the semester

The RSO may be reviewed upon a reasoned request from the applicant studying the OK, the student self-government body or the student trade union committee, submitted to the head of the supporting department. The review procedure is defined in Section 7 of the Regulations on the System of Assessment of Learning Outcomes at Igor Sikorsky KPI https://osvita.kpi.ua/sites/default/files/downloads/Pologennia_RSO_2025.pdf

9. Additional information on the discipline (educational component)

Recommendations for students

Lectures on the discipline "Scientific research on the topic of a master's thesis" cover key issues of organizing and conducting scientific research in the context of preparing a master's thesis. The main concepts, structure and types of scientific research, the problem of truth and the structure of scientific knowledge are considered. During the lectures, theoretical general scientific methods, the basic principles of working with sources, as well as the criteria for selecting a research topic and determining its relevance are analysed. Particular attention is paid to the requirements for the structure and formatting of a master's thesis, the technological principles of its writing and the generalisation of results. The lecturer will provide students with a comprehensive overview of the scientific work process, focusing on the practical aspects of writing a thesis, requirements for structure and formatting, methodological approaches, and forms of research testing. The lectures contain practical advice on organizing research, analyzing sources, and presenting results in the form of scientific publications, reports, and conferences.

Students are expected to be able to apply theoretical principles in practice. Practical classes will discuss problematic aspects of organising and conducting scientific research, methodological approaches, and requirements for writing a master's thesis. Practical classes are aimed at developing scientific work skills, in particular working with scientific sources, analysing and systematising information, formulating research questions and hypotheses, and selecting the appropriate research methodology. Particular attention is paid to the formatting of scientific texts, adherence to academic integrity, and the correct use of citations and references. During the classes, the lecturer will summarise and analyse typical mistakes in the preparation of master's research, provide recommendations for their elimination, and answer students' questions. Students will have the opportunity to work on individual and group assignments, discuss their own research, comment on and analyse the work of their classmates.

Extracurricular activities

Students may participate in an informal club for sociologists.

Distance learning
Synchronous distance learning is possible using video conferencing platforms and the university's educational platform for distance learning.

Inclusive learning
Permitted

Work programme for the academic discipline (syllabus): Research work on the topic of the master's thesis.

Compiled by Associate Professor, Candidate of Philosophical Sciences, Associate Professor, Ihor Viktorovych Pyholenko

Approved by the Department of Sociology (Minutes No. 14 of 23.06.2025)

Approved by the Methodological Commission of the Faculty of Sociology and Law (Minutes No. 4 dated 24 June 2025)

List of questions to be included in the exam.

1. Requirements for the formatting of master's theses. Requirements for the content of the structural elements of the work.
2. Abstract, concept of an abstract and requirements for it.
3. Requirements for the admission of master's theses to defence.
4. Defence of a master's thesis. Criteria for evaluating master's theses.
5. The concept of scientific research. Basic principles of research work.
6. The importance of personal motivation for researchers in writing high-quality scientific work.
7. The social significance of research activities for society as a whole.
8. Quality of scientific sources.
9. The concept and types of plagiarism.
10. Ethics of a scientist.
11. Determining the quality of Ukrainian sources: list of professional publications, websites of individual journals. Determining the quality of foreign sources: rating of English-language publications.
12. Stages of working with literature. Searching; systematising and storing information; summarising; compiling a bibliography.
13. Theoretical and empirical research methods.
14. The concept of truth. The functions of truth in scientific knowledge.
15. Rational foundations of truth. Verification and falsification.
16. The unity of the sensual and the rational in cognition.
17. Definition of the object, subject, purpose and tasks of scientific research.
18. Formulation of a scientific question, its connection with the social problem that the research is aimed at solving.
19. Components of scientific work. Introduction, main part, conclusions.
20. Developing the structure of scientific work using the MindMap computer programme.
21. Correspondence of the structural elements of the main part and conclusions to the goal and objectives of scientific work.
22. Writing proposals for a research project.
23. Justification of the relevance of the chosen topic.
24. The problem that the research aims to solve, the social significance of this problem.
25.

List of questions to be submitted to the modular control work.

1. Requirements for the formatting of master's theses. Requirements for the content of the structural elements of the work.
2. Abstract, concept of an abstract and requirements for it.
3. Requirements for the admission of master's theses to defence.
4. Defence of a master's thesis. Criteria for evaluating master's theses.
5. The concept of scientific research. Basic principles of research work.
6. The importance of personal motivation for researchers in writing high-quality scientific work.
7. The social significance of research activities for society as a whole.
8. Quality of scientific sources.
9. The concept and types of plagiarism.
10. Ethics of a scientist.
11. Determining the quality of Ukrainian sources: a list of professional publications, websites of individual journals. Determining the quality of foreign sources: ranking of English-language publications.
12. Stages of working with literature. Searching; systematising and storing information; summarising; compiling a bibliography.
13. Theoretical and empirical research methods.
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15. Rational foundations of truth. Verification and falsification.

16. The unity of the sensual and the rational in cognition.
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18. Formulation of a scientific question, its connection with the social problem that the research is aimed at solving.
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20. Developing the structure of scientific work using the MindMap computer programme.
21. Correspondence of the structural elements of the main part and conclusions to the goal and objectives of scientific work.
22. Writing proposals for a research project.
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