Національний технічний університет України
«КИЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ
імені ІГОРЯ СІКОРСЬКОГО»

КАФЕДРА ІСТОРІЇ

Department of HISTORY, FSP

Artificial intelligence in professional activity

Curriculum of 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	*Elective*
Form of study	*Full-time (day)*
Year of study, semester	*1st year, spring semester*
Scope of the discipline	*4 ECTS credits / 120 hours,* *16 hours of lectures, 30 hours of practical classes, 74 hours of independent work.*
Semester assessment/assessment measures	*Test / Modular control work*
Class schedule	*https://schedule.kpi.ua/*
Language of instruction	*Ukrainian*
Information about course director / lecturers	Lecturer: *Candidate of Historical Sciences, Associate Professor Yurii Mykolaiovych Perga, https://history.kpi.ua/department/academic-staff/perga/* *e-mail perga.iurii@lll.kpi.ua* Practical / Seminar: *Candidate of Historical Sciences, Associate Professor Yurii Mykolaiovych Perga, perga.iurii@lll.kpi.ua*
Course location	*A link to the distance learning resource will be provided during the first class.*

Curriculum

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

The course "Artificial Intelligence in Professional Activity" is designed to familiarise students with the basics of using intelligent digital technologies in the fields of public administration, education, law, analytics, management consulting and other areas of activity of masters of public administration. The course covers the key concepts and tools of artificial intelligence, their possible applications, as well as the ethical, legal and social challenges associated with their use in practice.

The aim of the course is to help students understand the principles of artificial intelligence systems and learn how to use them in their professional activities, taking into account ethical standards and strategic goals for the development of society.

The subject of the course is the basic approaches to the functioning of AI and the possibilities of their application in the professional sphere; basic approaches to building artificial intelligence systems; features of the impact of AI technologies on management decision-making; assessment of the capabilities and limitations of modern AI tools in the field of public administration; development of critical thinking regarding the implementation of intelligent technologies in professional processes; analysis of the effectiveness and feasibility of implementing AI in specific processes of organisations; identification of risks associated with the use of AI and compliance with the principles of ethics and integrity in its application; application of specific services and platforms based on AI technologies; practical skills in using popular AI services and platforms; responsibility for the implementation of new technologies in the public sector in compliance with the norms of ethics, law and integrity.

The course contributes to the development of the following programme competencies and learning outcomes, in particular, ***general competencies***:

- Ability to think abstractly, analyse and synthesise
- Ability to improve and develop professional, intellectual and cultural levels
- Ability to make informed decisions and use modern communication technologies;

Professional competencies:

- Ability to organise information and analytical support for management processes using modern information resources and technologies, in particular to develop measures for the implementation of e-government in various areas of public management and administration
- Ability to make proposals for digital transformation in public administration
- Ability to apply modern information and communication technologies, in particular digital and smart technologies;

Programme learning outcomes:

- Use modern statistical methods, models, digital technologies, and specialised software to solve complex problems in public management and administration.
- Be able to communicate effectively, argue one's position, use modern information and communication technologies in the field of public management and administration on the basis of social responsibility, legal and ethical norms.
- Be able to diagnose problems and develop recommendations for the implementation of digital transformations in public management.

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

Prerequisites: the discipline does not require specific knowledge or skills. To master the discipline, it is sufficient to have basic knowledge of computer science, logic, mathematical statistics, analytical thinking, as well as the ability to work with digital tools and basic data processing programmes.

Post-requisites: studying the discipline deepens students' knowledge of the application of artificial intelligence methods and technologies in professional activities, develops skills in analysing and integrating AI solutions into practical processes, and can be used when mastering professional disciplines, performing practical tasks, and preparing a master's thesis.

3. Course content

1. **Artificial intelligence: basic concepts, ethical and legal aspects**
   (introduction to the discipline, basics of AI, challenges and opportunities in the humanities)
2. **Artificial intelligence in public administration: digital governance, data analysis, decision automation**
   (areas of application, examples, risks and effectiveness)
3. **The use of AI in legal practice: legal analysis, document management, algorithmic justice**
   (regulatory aspects, ChatGPT/LLM in legal practice)
4. **Social consequences of AI implementation: prospects and risks for society**
   (challenges for democracy, digital inequality, transparency of AI systems)
5. **Artificial intelligence in historical research: digital archives, text classification, historiography of the future**
   (examples of AI use in the humanities)
6. **AI in sociology: analysis of social networks, forecasting social processes, identifying social trends**
   (processing of data arrays, bias in data, verification of results)
7. **Prompt engineering: creating effective queries for working with language models**
   (practical techniques for interacting with LLM, instructions, templates, prompting ethics)
8. **Practical application of AI in professional activities: creating cases, designing solutions**
   (working on case studies, critical analysis of solutions, discussion of personal experience)

4. Training materials and resources

Basic literature:

1. Adamenko, I. V. (2023). Artificial intelligence as a challenge to democratic governance. *Effectiveness of Public Administration*, 2(71), 120–128. URL: http://www.lvivacademy.com/vidavnitstvo_1/edu_71/fail/adamenko.pdf
2. Knyazev, S. M. (2023). Artificial intelligence: contemporary challenges in law and governance. *Bulletin of the National Academy of Legal Sciences of Ukraine*, 30(1), 8–21. URL: https://visnyk.onua.edu.ua/index.php/visnyk/article/view/158
3. Floridi, L. (2023). *The Ethics of Artificial Intelligence*. Oxford University Press. Open version: https://philpapers.org/rec/FLOTHE-9
4. OpenAI. (2023). *ChatGPT Prompt Engineering Guide*. URL: https://github.com/openai/openai-cookbook/blob/main/techniques_to_improve_reliability.md
5. Perga, I. (2024). The role of AI (large language models) in managerial decision-making: Benefits and challenges. *Scientific Perspectives*, 10(52), 32–49. URL: https://doi.org/10.52058/2708-7530-2024-10(52)-32-49

Additional literature:

1. Voiko, I. I. (2023). Artificial intelligence in teaching social sciences. *Educational Discourse*, 2(44), 50–58. URL: http://edudiscourse.org.ua/index.php/edudis/article/view/570
2. Hluschenko, V. V. (2021). Artificial intelligence and human rights: new challenges. *Legal Ukraine*, 9, 19–25. URL: http://yurukr.org.ua/jur/article/view/165497
3. Dobrovolsky, O. O. (2022). Digital transformation in social sciences and humanities: the role of artificial intelligence. *Social Sciences and Humanities Studies*, 4, 101–110. URL: https://social-science.com.ua/index.php/journal/article/view/71
4. Kozak, V. A. (2023). Promt engineering in the field of digital governance. *Public Administration: Improvement and Development*, 8. URL: https://www.dy.nayka.com.ua/pdf/8_2023/29.pdf
5. Ukrainian Centre for Educational Quality Assessment. (2023). Methodological recommendations for the ethical use of artificial intelligence in education. URL: https://testportal.gov.ua/wp-content/uploads/2023/09/ai_guidelines_education_ua.pdf
6. Binns, R. (2018). *Fairness in Machine Learning: Lessons from Political Philosophy*. In Proceedings of the 2018 Conference on Fairness, Accountability and Transparency. URL: https://dl.acm.org/doi/10.1145/3287560.3287598
7. Dignum, V. (2019). *Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way*. Springer. URL (free preview): https://link.springer.com/book/10.1007/978-3-030-30371-6
8. European Commission. (2021). *Ethics Guidelines for Trustworthy AI*. URL: https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai
9. Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. (2016). *The ethics of algorithms: Mapping the debate*. Big Data & Society, 3(2). URL: https://journals.sagepub.com/doi/full/10.1177/2053951716679679
10. Roio, D. (2022). *Prompt Engineering and Generative AI*. arXiv preprint. URL: https://arxiv.org/abs/2307.09003

Educational content

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

The following **teaching methods** are used when studying the course material:

Teaching method code	Teaching method	Recommended for	
		Lectures	Seminars
MN 1	***Explanatory-illustrative method or informational-receptive*** Video method in combination with the latest information technologies and computer-based learning tools (distance learning, multimedia, web-based, etc.)	+	+
MN 2	**Verbal method** (lecture, conversation, instruction, etc.)	+	+
MN 3	**Visual method** (illustration method and demonstration method)	+	+
MN 4	**Discussion method**	+	+
MN 5	**Business game** as a method of active creative learning		+
MN 6	***Partial search, or heuristic, method*** Organisation of active search for solutions to cognitive tasks		+
MN 7	***Problem-based teaching method*** Before presenting the material: a problem is posed - a task is formulated based on various sources and means. The method of solving the problem is discussed in class.		+

5.1. Lectures (7 sessions)

Lecture 1. Artificial intelligence: basic concepts, ethical and legal aspects
Class content:
- History of AI development and modern definitions
- Main types and technologies of artificial intelligence
- Ethical dilemmas and legal aspects of AI use
- The role of AI in the professions of the future

Independent student work (ISW):
- Research examples of AI applications in various fields
- Comparative analysis of approaches to AI ethics in Ukraine and the EU
- Review national and international AI development strategies
- Write an essay: "Should AI have legal status?"

Recommended reading:
Floridi (2023); Knyazev (2023); Mittelstadt et al. (2016); European Commission (2021)

Lecture 2. AI in public administration: digital governance, data analysis, decision automation
Course content:
- Examples of AI use in the public sector
- Data-driven decision-making systems
- Automation of document flow and interaction with citizens
- Risks and limitations

ISW:
- Analysis of the "Diя" case study and opportunities for AI integration
- Search for global practices in public service automation
- Writing a short policy paper: "What AI tool does the community need?"
- Research on the challenges of digital inequality

Recommended reading:
Adamenko (2023); Kozak (2023); Dignum (2019); Susskind & Susskind (2015)

Lecture 3. AI in legal practice: legal analysis, document management, algorithmic justice
Class content:
- Automatic legal analysis systems
- ChatGPT and LLM in the creation of legal documents
- AI-based court systems
- Legal liability for AI decisions

ISW:

- Searching for decisions using AI in Ukrainian legal practice
- Analysis of the COMPAS case (algorithmic justice in the US)
- Essay: "Can AI be a lawyer?"
- Drafting templates for legal requests to LLM

Recommended reading:
Hluschenko (2021); Susskind & Susskind (2015); European Commission (2021)

Lecture 4. Social consequences of AI implementation: prospects and risks
Class content:
- AI and public trust
- Impact on the labour market and social mobility
- The problem of digital inequality
- Transparency and control of algorithms

ISW:
- Analysis of sociological surveys on attitudes towards AI
- Research on "black box" problems in algorithms
- Preparation of a presentation: "AI and democracy"
- Writing an analytical note: "Ethical AI for the community"

Recommended reading:
Mittelstadt et al. (2016); Dobrovolsky (2022); Binns (2018)

Lecture 5. AI in historical research: digital archives, text classification
Course content:
- Tools for analysing historical sources
- Digitisation and interpretation of historical data
- Identifying themes and narratives using AI
- Examples of Digital History projects

ISW:
- Working with digital archives (Europeana, Archive.org)
- Searching for thematic clusters in historical texts
- Analysing sources using AI technologies
- Comparing the results of manual and automatic analysis

Recommended reading:
Voiko (2023); Dobrovolsky (2022); Floridi (2023)

Lecture 6. AI in sociology: social network analysis, process forecasting
Class content:
- Algorithms in the study of social connections
- Processing large arrays of social data
- Identifying behaviour patterns
- Bias and representativeness issues

ISW:
- Studying tools such as NodeXL and Gephi
- Conducting mini-research on social networks
- Case study: "AI in election campaigns"
- Essay: "Is sociological AI objective?"

Recommended reading:
Binns (2018); Dobrovolsky (2022); Dignum (2019)

Lecture 7. Prompt engineering: techniques for creating queries
Class content:
- Basics of prompt engineering
- Types of prompts: instructions, role-playing, examples
- Errors and improving results
- Recommendations for effective interaction with LLM

ISW:

- Creating 5 types of prompts for tasks
- Experiment: one request – different formulations
- Comparison of GPT vs Copilot vs Claude generations
- Developing templates for a specific profession

Recommended reading:
OpenAI (2023); Roio (2022); Kozak (2023)

Lecture 8. Practical application of AI in professional activities
Class content:

- Review of AI use cases
- Project thinking in digital transformation
- Integrating AI into your personal professional trajectory
- Presentation of mini-projects

ISW:

- Developing your own AI application case
- Self-assessment of digital competence
- Essay: "AI in my future profession"
- Preparation of a presentation-pitch of ideas

Recommended reading:
Susskind & Susskind (2015); OpenAI (2023); Voitko (2023)

5.2. Seminars (15 sessions)

Seminar 1. Introduction to the course. AI in society: expectations and reality

- Introduction to the course plan
- Discussion: "What is AI and how will it affect my profession?"
- Analysis of media narratives about AI (news, films, advertising)
- Group exercise: creating a "map of expectations" for AI

Seminar 2. Ethics of artificial intelligence: from theory to practice

- Analysis of cases of ethical violations in AI (face recognition, discrimination)
- Discussion: "Should AI adhere to moral standards?"
- Practice: developing your own code of ethics for the use of AI

Seminar 3. AI in management: analysis of Ukrainian cases

- Analysis of examples of digital governance (e.g., "Дія," "Prozorro")
- Modelling: how to implement AI in the work of the Administrative Services Centre or the Department of Education
- Working with data: how to collect data for AI in the community

Seminar 4. Foreign experience: AI in management abroad

- Case studies of Estonia, South Korea, Estonia
- Comparison of legal and institutional models for AI implementation
- Modelling: developing a strategy for implementing AI in ATCs

Seminar 5. Algorithmic justice: between efficiency and fairness

- Discussion: "Can a machine judge?"
- Analysis of the COMPAS case (USA)
- Practical work: creation of a "judicial tool" for risk assessment

Seminar 6. Legal risks of AI: what does the law regulate?

- Discussion of the European AI Act
- The role of lawyers in developing AI policies
- Creating a list of recommendations for implementing AI in legal practice

Seminar 7. Social aspects of AI: critical analysis of ideologies

- Discussion: is AI "neutral"?
- Analysis of the ideological influence of algorithms (YouTube, TikTok, Facebook)
- Task: identifying manipulative content on social media using AI

Seminar 8. AI and democracy: freedom, control and responsibility

- Analysis of the use of AI in political campaigns
- Case studies: deepfakes, bot farms, news filtering
- Discussion: how to regulate the influence of AI on civil society?

Seminar 9. AI in historical research: practical applications

- Analysis of digital archives: Europeana, British Library Labs
- Practice: identifying key themes in historical texts using GPT
- Discussion: "Does AI pose a threat to historical science?"

Workshop 10. Visualising history with AI

- Generating historical images (Midjourney, DALL·E)
- Task: create visual accompaniment to an event in Ukrainian history
- Discussion on the ethical limits of reconstructions

Seminar 11. Sociology and AI: real-time analysis of society

- Practice: collecting data from social networks
- Working with NodeXL or similar services
- Building social graphs and network analysis

Seminar 12. Data bias in social research

- Defining "bias" in training samples
- Task: identifying potential errors in AI predictions
- Group discussion: "How to make AI socially fair?"

Seminar 13. Prompt engineering: the art of creating queries

- Practice: formulating prompts for different tasks
- Testing: how one query changes the GPT response
- Building templates for management / education / law

Workshop 14. Presentation of mini-projects: AI in my professional activity

- Project pitching (2–3 minutes per student or team)
- Evaluation based on criteria: innovation, realism, ethics
- Final discussion: the future of human labour in the age of AI

Seminar 15. Modular control work

6. Independent work of higher education students

This section contains an indicative list of forms of individual student activity aimed at deepening, consolidating and applying the knowledge gained during lectures and seminars.

According to the curriculum, the total amount of independent work is **74 hours.**

Approximate planning by the student of their time (academic hours) for the completion of individual assignments in the academic discipline

No.	Type of student work	Time requirement, hours	Number	Total, hours
1.	Preparation for lecture	0.5	8	4
2	Preparation for a seminar	4.3	14	60

3	Preparation for MCW	4	1	4
4	Preparation for the exam	6	1	6
	Total			74

Forms of independent work:

1. **Reviewing literature on course topics** (familiarisation with recommended sources, preparation of short abstracts/summaries for each topic).
2. **Writing essays on ethical, legal or social aspects of AI** (at the student's choice).
3. **Preparing presentations for seminars** (individual assignments for individual presentations).
4. **Analysis of cases of AI application** in public administration, education, law, history or sociology.
5. **Searching for and analysing AI-based digital tools** that can be used in the student's professional field.
6. **Practical task in prompt engineering**: creating your own set of prompts for professional tasks.
7. **Development of a mini-project**: "AI in my profession" (individual or in pairs, presentation at the last seminar).
8. **Reflective notes** after each thematic block (what I learned, how it changes my understanding of the profession, what risks and benefits I see).
9. **Preparation for the test**: revision of key concepts, independent study of test questions.
10. **Analysis of documents (strategies, regulations, AI codes of ethics)** with written commentary.

Forms of control over the performance of independent work:

- oral reports/presentations at seminars;
- written assignments (essays, reflections, analytical notes);
- mini-project defence;
- individual consultations with the teacher (if necessary);
- participation in testing/final assessment.

Policy and control

7. Policy of the academic discipline (educational component)

General provisions

The course requires active participation of students in seminars and practical classes, completion of individual assignments, adherence to deadlines and academic integrity. Formation of one's own position, critical thinking, ability to reflect and interdisciplinary analysis are key elements of assessment.

Attendance and participation

- Attendance at **lectures is recommended**, and attendance at **seminars is mandatory**.
- Active participation in seminars is part of the overall final grade.
- If a student misses a seminar, they are required to study the topic independently and provide a written or oral explanation/assignment as agreed with the lecturer.

Deadlines for assignments

- All written and project work must be submitted **within the established deadlines**.
- Late assignments are accepted only for valid reasons (with evidence) and may be graded with penalty points.

Academic integrity

- **Plagiarism, fabrication, falsification, cheating**, and falsification of results are considered gross violations of academic integrity.
- Assignments with a similarity level of more than 30% (without proper references) **will not be accepted for assessment**.
- In case of repeated violations of the rules, the student may be suspended from the course or transferred to an individual plan.

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, please visit: https://kpi.ua/code.
Other necessary information regarding academic integrity is defined in the "Regulations on the system for preventing academic plagiarism at Igor Sikorsky Kyiv Polytechnic Institute." For more details, see: https://osvita.kpi.ua/node/47.

Incentive and penalty points

Incentive points		Penalty points	
Criterion	Weight	Criterion	Weight
Participation in a student scientific conference, faculty or university Olympiad (no more than once per semester)	5-10		

Standards of ethical behaviour
The standards of ethical behaviour 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 details, see: https://kpi.ua/code.

Use of AI in completing tasks

- **It is permitted** to use AI tools (e.g., ChatGPT) to generate ideas, search for sources, provide technical assistance in prompt engineering, etc.
- **It is prohibited** to completely copy answers generated by AI without editing, adaptation, and critical reflection.
- Students are required **to indicate** when they use AI support tools.

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 KPI". For more details, see: https://osvita.kpi.ua/node/1225

Communication

- All official communication is carried out through selected platforms (e-mail, LMS, Teams or Moodle).
- Students have the right to contact the teacher with any questions regarding the course during consultation hours or by appointment.

Recognition of informal education
The results of online courses, certified training courses or practical projects that correspond to the subject of the course can be credited as an alternative to individual assignments or as a supplement to the marks. To do this, the student submits the relevant certificate or project with a brief description.

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

Assessment system

Student knowledge is assessed on a 100-point scale, which consists of:

- ***Seminar work*** *– 56 points*
- ***Modular control work (MCW)*** *– 44 points*

Rating (weighted) point system and assessment criteria:

No.	Test	Weighting	Quantity	Total
1.	Presentation at a seminar (participation in discussion)	4	14	56

2.	The Modular control work consists of:			
	□ answers to test questions	1	44	44
	Total			100

Calendar control: conducted twice per semester as monitoring of the current status of syllabus requirements fulfilment. There are two possible results of calendar control: certified (c) and not certified (n/c). The result depends on the number of points scored at the time of calendar control. The RSO specifies the number of points required for certification during the first and second calendar controls.

Semester assessment: credit.

Conditions for admission to semester control: A minimum of 40 points and completion of the MCR.

Assessment criteria

Seminar classes (56 points):

The assessment for 14 seminars is based on student activity, preparation for the class, quality of task completion, and participation in discussions. The maximum score for a seminar is 4 points.

Modular control work (44 points):

The MCW is held at the end of the semester and covers the main topics covered at that point. The maximum score for the MCW is 44 points.

Ongoing assessment, criteria:

– complete answer – the student demonstrates complete and solid knowledge of the main and additional educational material in the given volume, correctly and reasonably makes the necessary decisions in various communicative situations – **4 points**;

– sufficiently complete answer or complete answer with minor shortcomings made by the student – **3 points;**

– additions to individual questions of the educational material – **1-2 points.**

Writing an MCW from 44 tests. (The maximum number of points for the MCW is 44 points *(the maximum number of points for 1 test is 1 point)*.

- Correct answer – 1 point.
- Incorrect answer – 0 points.

The student will receive the highest rating if he/she:

- actively participates in seminars, mainly provides complete and reasoned answers, presents them logically, expresses their own position on controversial issues, presents this position clearly and logically, justifies it properly, and actively supplements the answers of other students in class;
- prepares and completes the module control work (MCW) at the end of the course in a timely manner. Students are given a one-time opportunity to write the MCW.

Requirements for successful completion of the course

To successfully complete the course, students must score at least 60 points in the final assessment, taking into account all types of assessment.

Students who have not completed the MCW with a grade of at least "sufficient" and have not received at least 40 starting points are not admitted to the exam.

Students who have met the conditions for admission to the exam but have scored less than 60 points during the semester are given the opportunity to take additional assignments to reach the required minimum.

If a student receives less than 60 points, they have the right to take the exam.

Examination. Weighted score – 100.

The exam takes the form of a list of questions that the student must answer. The questions vary in content and correspond to the topics of lectures, seminars, independent work, and self-assessment questions.

Assessment criteria

95-100 points - the student demonstrates a deep knowledge of the content of the course material, the ability to systematically and interdisciplinarily analyse the issues covered in the course; freely and correctly uses scientific concepts and terms, formulates logical, reasoned conclusions, and expresses their own well-founded position on controversial issues;

85-94 points - the student demonstrates a very good level of mastery of the course material, is well versed in the main topics of the course, is capable of analysis and generalisation; there may be isolated inaccuracies in formulations or examples that do not significantly affect the overall level of the answer;

75-84 points - the student demonstrates a fairly complete understanding of the main topics and issues of the course. Uses basic scientific terminology, but the analysis is mainly descriptive; conclusions are formulated, but not always sufficiently substantiated;

65-74 points - the student demonstrates a general understanding of the course material, but the answers contain noticeable inaccuracies in definitions, examples or logic of presentation; the use of scientific terminology is limited, the analytical component is weak;

60-64 points - the student demonstrates fragmentary knowledge of individual topics of the course, is familiar only with some of the key concepts; answers are incomplete, superficial, conclusions are insufficiently substantiated or absent;

0-59 points - the student is not familiar with the key concepts and issues of the course, demonstrates superficial or chaotic knowledge; analytical thinking and the ability to apply the knowledge gained are absent; answers are illogical or incomplete.

Table of correspondence between rating points and university scale grades:

Number of points	*Grade*
100-95	Excellent
94	Very good
84	Good
74-65	Satisfactory
64-60	Sufficient
Less than 60	Unsatisfactory
Admission requirements not met	Not admitted

9. Additional information on the discipline (educational component)

List of questions for the test

1. What is artificial intelligence? What are the main approaches to its definition?
2. Name the main types of AI and their characteristics.
3. What is the difference between machine learning and deep learning?
4. What is a neural network and how does it work?
5. What ethical principles apply to the use of AI in society?
6. What risks to human rights may arise from the use of AI?
7. What is algorithmic bias and how can it be detected?
8. What are the legal aspects of AI regulation at the international level?
9. What does the concept of "responsible AI" mean?
10. How is AI used in public administration in Ukraine?
11. What are some examples of AI use in digital government services (e.g., Diya)?
12. What are the advantages and risks of automated decision-making in management?
13. How can AI be used in policy analysis and public forecasting?
14. What is the role of AI in legal activities (document flow, analysis)?
15. What is algorithmic justice and why is it controversial?
16. How are LLM (language models) used in legal practice?
17. What are the ethical limits of using generative AI in historical reconstructions?
18. How does AI help process large historical archives?
19. Give examples of digital platforms and services used by historians.

20. What place does AI occupy in contemporary sociology?
21. How is AI applied in the analysis of social networks and data?
22. How can AI help identify social trends?
23. What threats does AI pose to the reliability of sociological research?
24. What is prompt engineering and what is its purpose?
25. What types of prompts are there and how do they affect the generation result?
26. What rules should be considered when creating an effective prompt?
27. How can prompt engineering be applied in your future profession?
28. What are the key factors that influence the effectiveness of AI in the workplace?
29. How can AI influence the transformation of future professions?
30. What opportunities and challenges does the development of AI present to society?

The working programme of the academic discipline (syllabus):

Compiled by Yurii Mykolaiovych Perga, Associate Professor of the Department of History, Candidate of Historical Sciences

Approved by the Department of History (Minutes No. 14 of 18 June 2025)

Approved by the NMKU (Minutes No. 12 of 18 June 2025)